FIG. 1

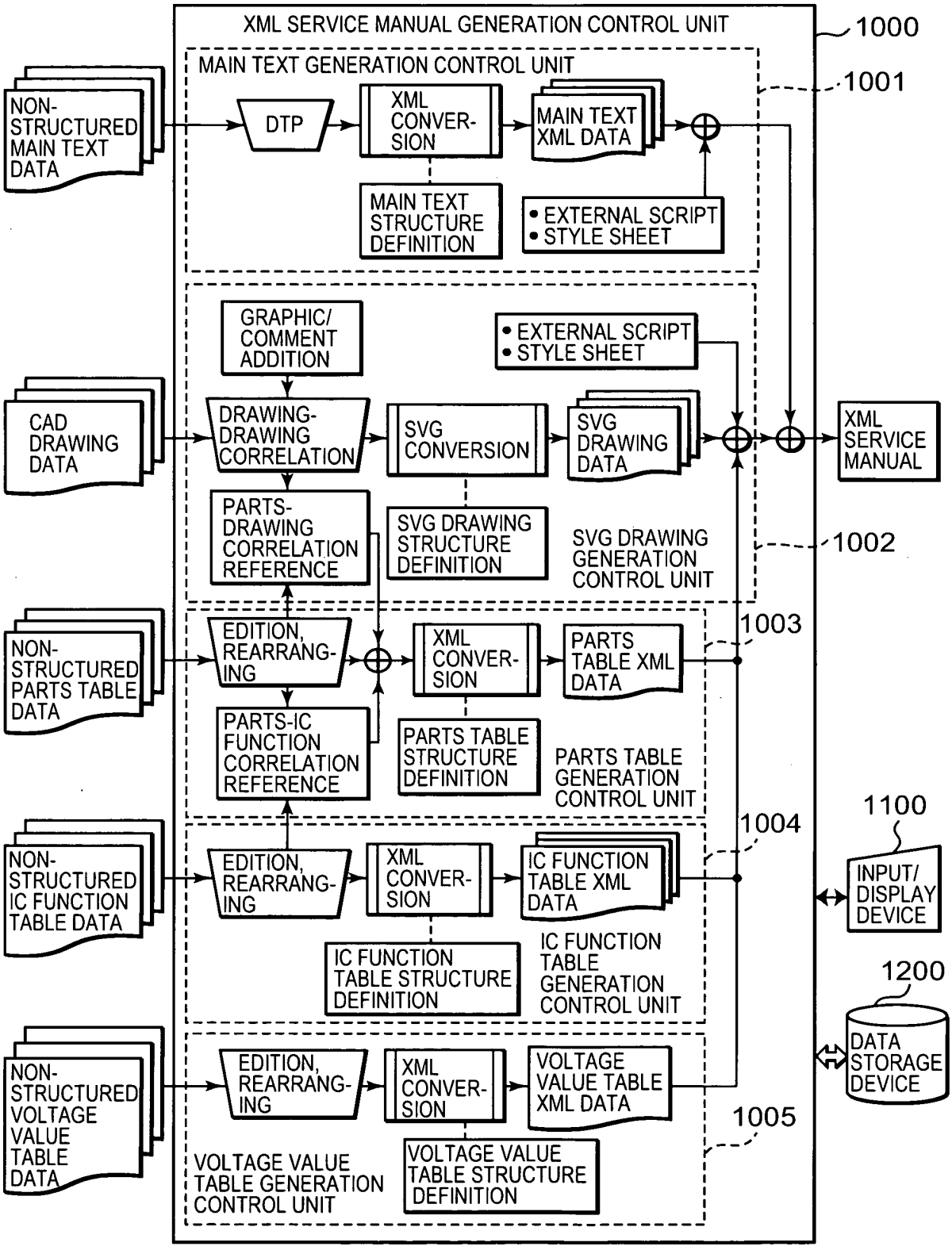

XML SERVICE MANUAL GENERATION CONTROL UNIT
1000
MAIN TEXT GENERATION CONTROL UNIT
1001
NON-STRUCTURED MAIN TEXT DATA
DTP
XML CONVER-SION
MAIN TEXT XML DATA
MAIN TEXT STRUCTURE DEFINITION
• EXTERNAL SCRIPT
• STYLE SHEET
GRAPHIC/ COMMENT ADDITION
• EXTERNAL SCRIPT
• STYLE SHEET
CAD DRAWING DATA
DRAWING-DRAWING CORRELATION
SVG CONVERSION
SVG DRAWING DATA
XML SERVICE MANUAL
PARTS-DRAWING CORRELATION REFERENCE
SVG DRAWING STRUCTURE DEFINITION
SVG DRAWING GENERATION CONTROL UNIT
1002
NON-STRUCTURED PARTS TABLE DATA
EDITION, REARRANG-ING
XML CONVER-SION
PARTS TABLE XML DATA
1003
PARTS-IC FUNCTION CORRELATION REFERENCE
PARTS TABLE STRUCTURE DEFINITION
PARTS TABLE GENERATION CONTROL UNIT
1100
NON-STRUCTURED IC FUNCTION TABLE DATA
EDITION, REARRANG-ING
XML CONVER-SION
IC FUNCTION TABLE XML DATA
1004
INPUT/ DISPLAY DEVICE
IC FUNCTION TABLE STRUCTURE DEFINITION
IC FUNCTION TABLE GENERATION CONTROL UNIT
1200
NON-STRUCTURED VOLTAGE VALUE TABLE DATA
EDITION, REARRANG-ING
XML CONVER-SION
VOLTAGE VALUE TABLE XML DATA
DATA STORAGE DEVICE
1005
VOLTAGE VALUE TABLE GENERATION CONTROL UNIT
VOLTAGE VALUE TABLE STRUCTURE DEFINITION

FIG. 2

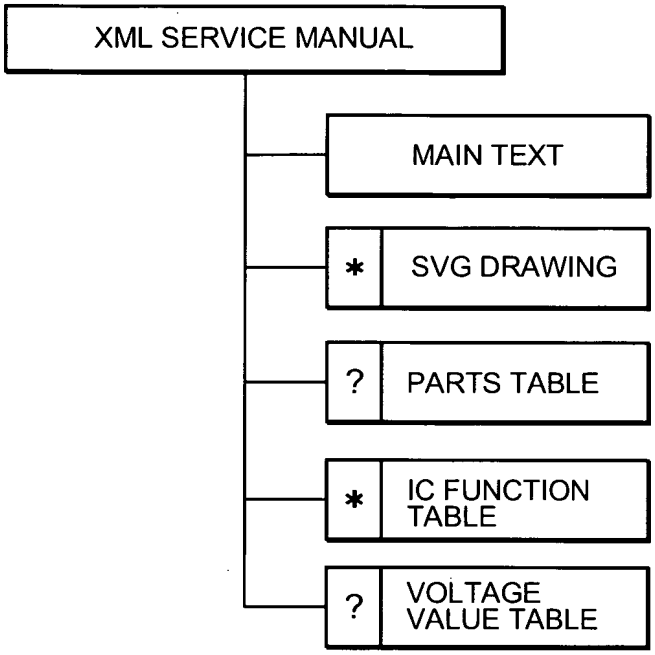

XML SERVICE MANUAL
MAIN TEXT
*
SVG DRAWING
?
PARTS TABLE
*
IC FUNCTION TABLE
?
VOLTAGE VALUE TABLE

FIG. 3

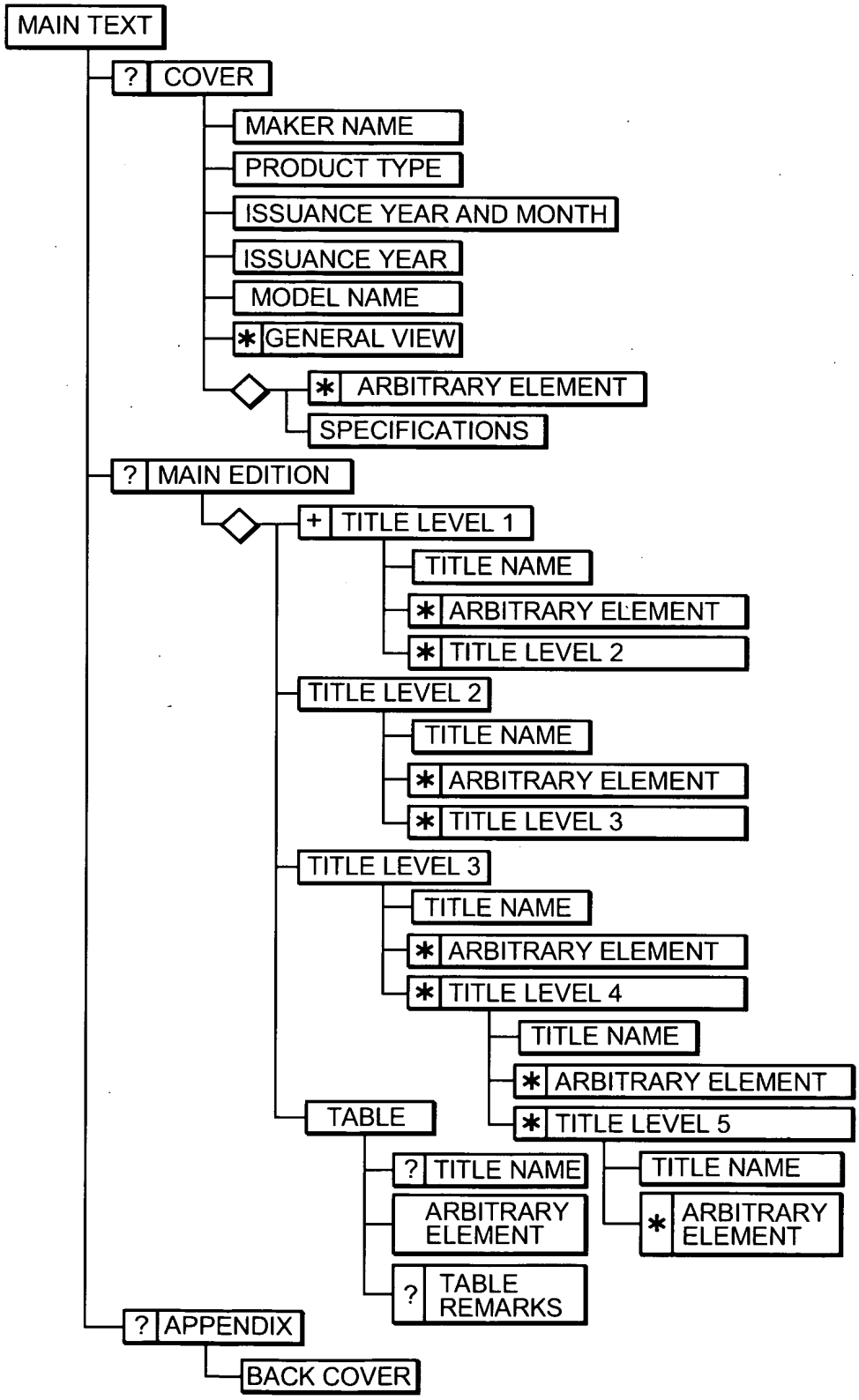

MAIN TEXT
? COVER
MAKER NAME
PRODUCT TYPE
ISSUANCE YEAR AND MONTH
ISSUANCE YEAR
MODEL NAME
* GENERAL VIEW
* ARBITRARY ELEMENT
SPECIFICATIONS
? MAIN EDITION
+ TITLE LEVEL 1
TITLE NAME
* ARBITRARY ELEMENT
* TITLE LEVEL 2
TITLE LEVEL 2
TITLE NAME
* ARBITRARY ELEMENT
* TITLE LEVEL 3
TITLE LEVEL 3
TITLE NAME
* ARBITRARY ELEMENT
* TITLE LEVEL 4
TITLE NAME
* ARBITRARY ELEMENT
* TITLE LEVEL 5
TABLE
? TITLE NAME
ARBITRARY ELEMENT
? TABLE REMARKS
TITLE NAME
* ARBITRARY ELEMENT
? APPENDIX
BACK COVER

FIG. 4

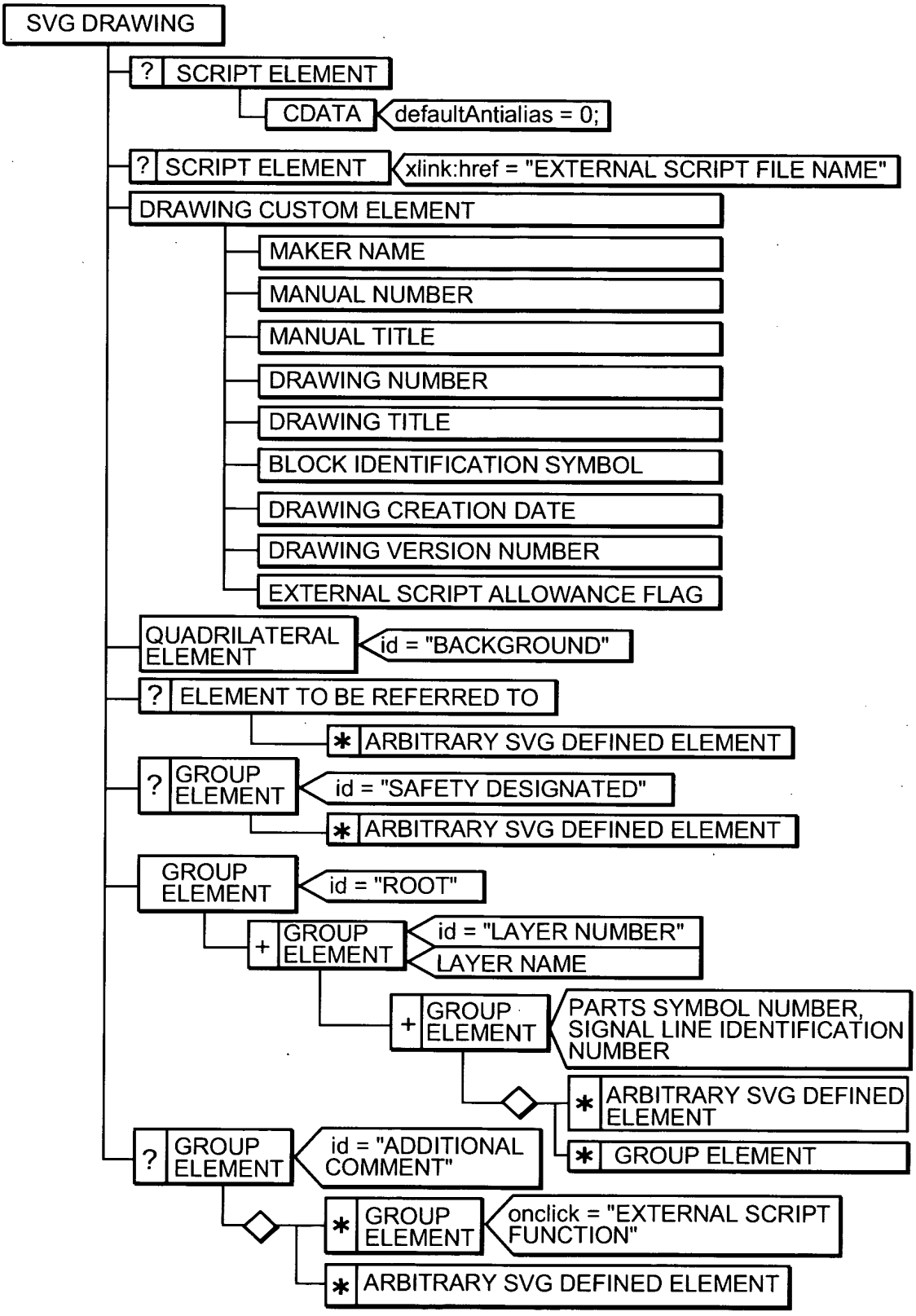

SVG DRAWING
? SCRIPT ELEMENT
CDATA
defaultAntialias = 0;
? SCRIPT ELEMENT
xlink:href = "EXTERNAL SCRIPT FILE NAME"
DRAWING CUSTOM ELEMENT
MAKER NAME
MANUAL NUMBER
MANUAL TITLE
DRAWING NUMBER
DRAWING TITLE
BLOCK IDENTIFICATION SYMBOL
DRAWING CREATION DATE
DRAWING VERSION NUMBER
EXTERNAL SCRIPT ALLOWANCE FLAG
QUADRILATERAL ELEMENT
id = "BACKGROUND"
? ELEMENT TO BE REFERRED TO
* ARBITRARY SVG DEFINED ELEMENT
? GROUP ELEMENT
id = "SAFETY DESIGNATED"
* ARBITRARY SVG DEFINED ELEMENT
GROUP ELEMENT
id = "ROOT"
+ GROUP ELEMENT
id = "LAYER NUMBER"
LAYER NAME
+ GROUP ELEMENT
PARTS SYMBOL NUMBER, SIGNAL LINE IDENTIFICATION NUMBER
* ARBITRARY SVG DEFINED ELEMENT
* GROUP ELEMENT
? GROUP ELEMENT
id = "ADDITIONAL COMMENT"
* GROUP ELEMENT
onclick = "EXTERNAL SCRIPT FUNCTION"
* ARBITRARY SVG DEFINED ELEMENT

FIG. 5

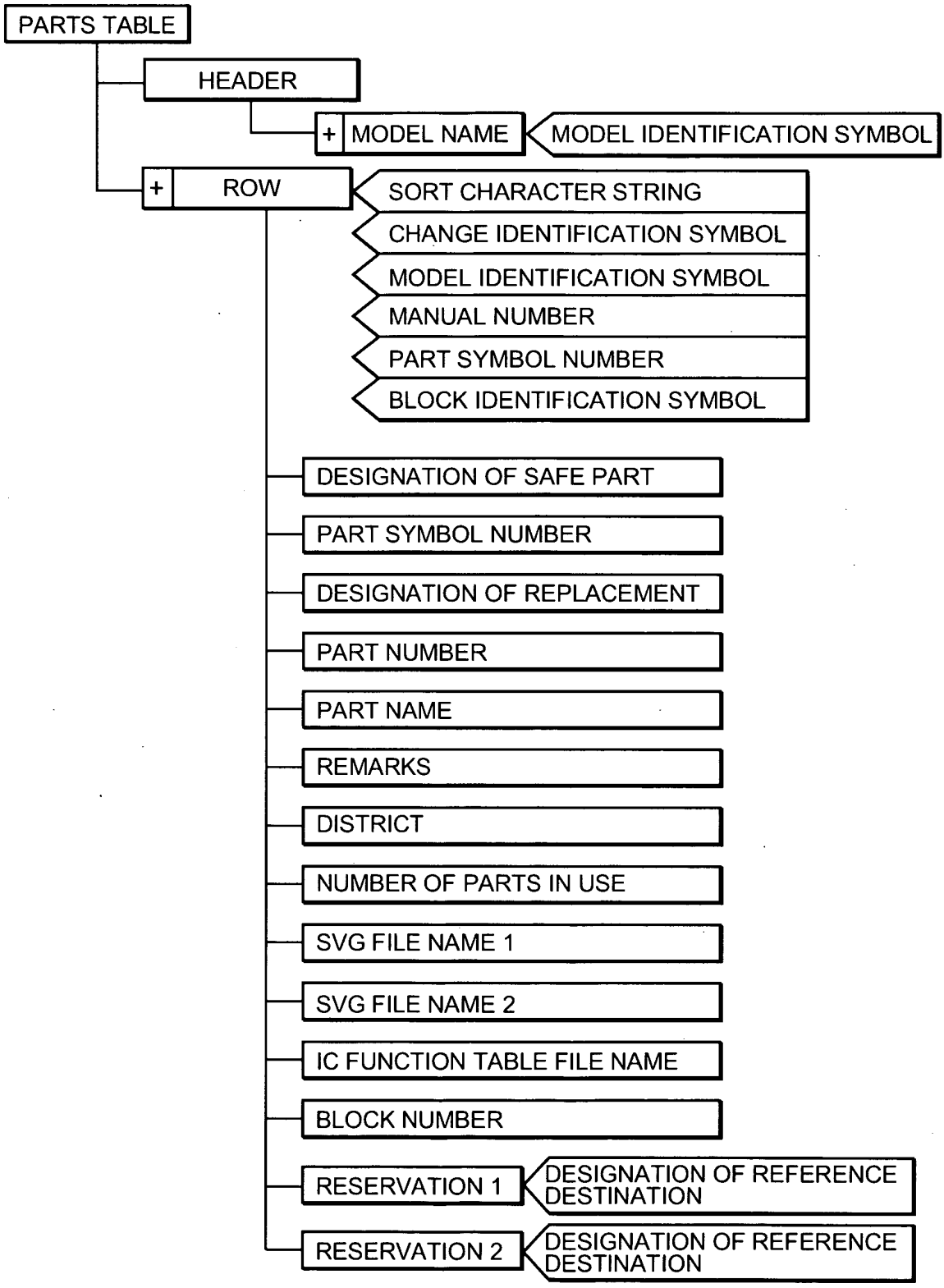

PARTS TABLE
HEADER
+
MODEL NAME
MODEL IDENTIFICATION SYMBOL
+
ROW
SORT CHARACTER STRING
CHANGE IDENTIFICATION SYMBOL
MODEL IDENTIFICATION SYMBOL
MANUAL NUMBER
PART SYMBOL NUMBER
BLOCK IDENTIFICATION SYMBOL
DESIGNATION OF SAFE PART
PART SYMBOL NUMBER
DESIGNATION OF REPLACEMENT
PART NUMBER
PART NAME
REMARKS
DISTRICT
NUMBER OF PARTS IN USE
SVG FILE NAME 1
SVG FILE NAME 2
IC FUNCTION TABLE FILE NAME
BLOCK NUMBER
RESERVATION 1
DESIGNATION OF REFERENCE DESTINATION
RESERVATION 2
DESIGNATION OF REFERENCE DESTINATION

FIG. 6

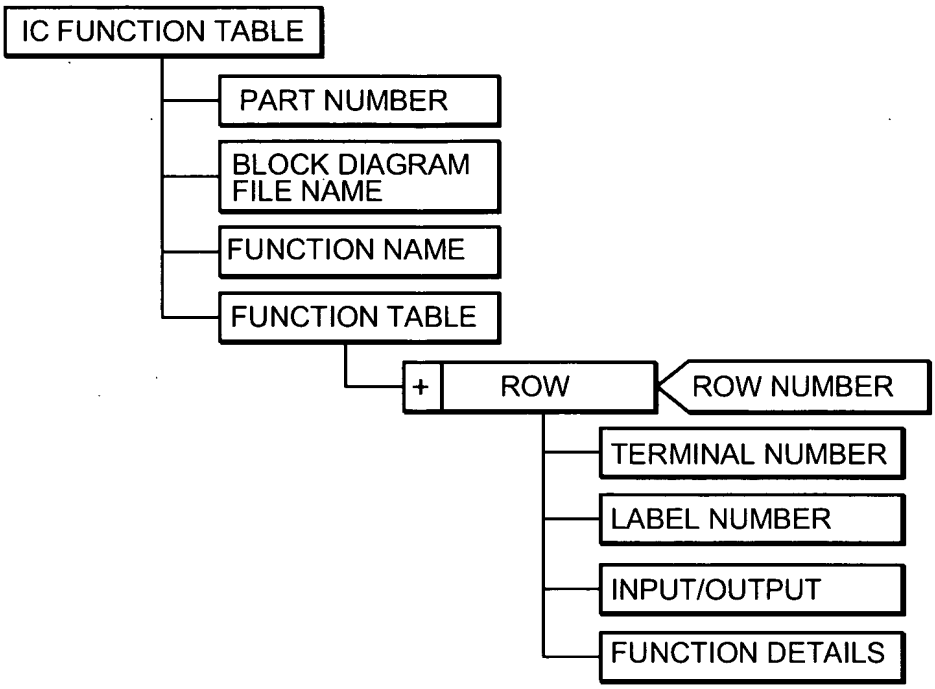

IC FUNCTION TABLE
PART NUMBER
BLOCK DIAGRAM FILE NAME
FUNCTION NAME
FUNCTION TABLE
+
ROW
ROW NUMBER
TERMINAL NUMBER
LABEL NUMBER
INPUT/OUTPUT
FUNCTION DETAILS

FIG. 7

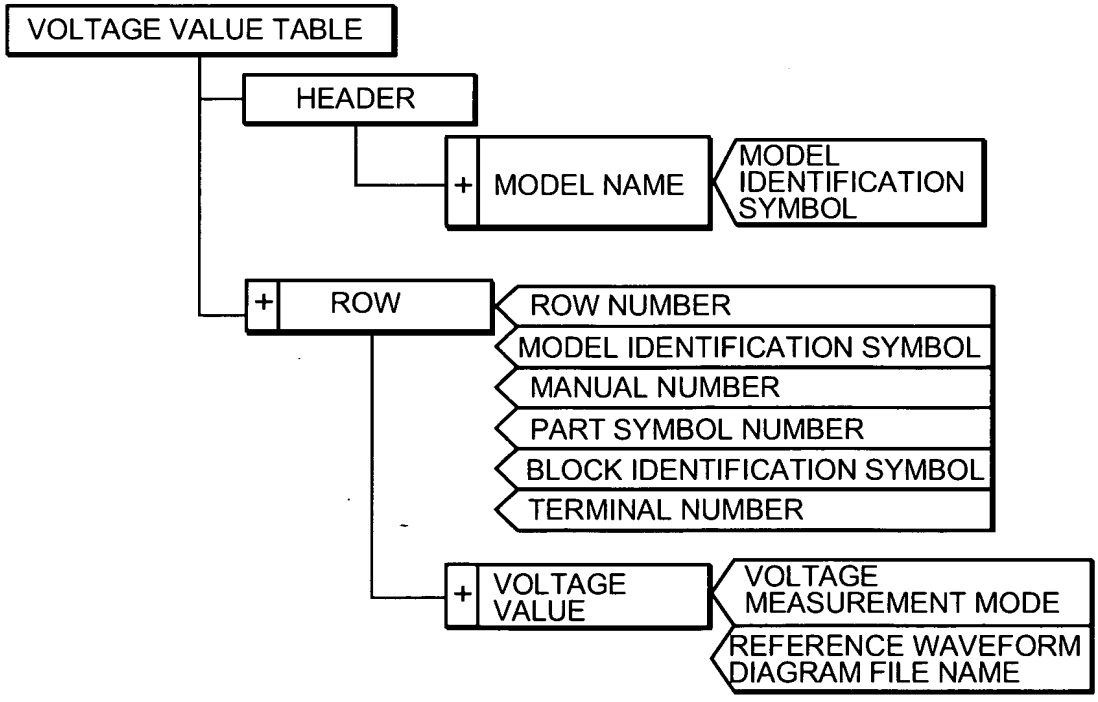

VOLTAGE VALUE TABLE
HEADER
+
MODEL NAME
MODEL IDENTIFICATION SYMBOL
+
ROW
ROW NUMBER
MODEL IDENTIFICATION SYMBOL
MANUAL NUMBER
PART SYMBOL NUMBER
BLOCK IDENTIFICATION SYMBOL
TERMINAL NUMBER
+
VOLTAGE VALUE
VOLTAGE MEASUREMENT MODE
REFERENCE WAVEFORM DIAGRAM FILE NAME

FIG. 8

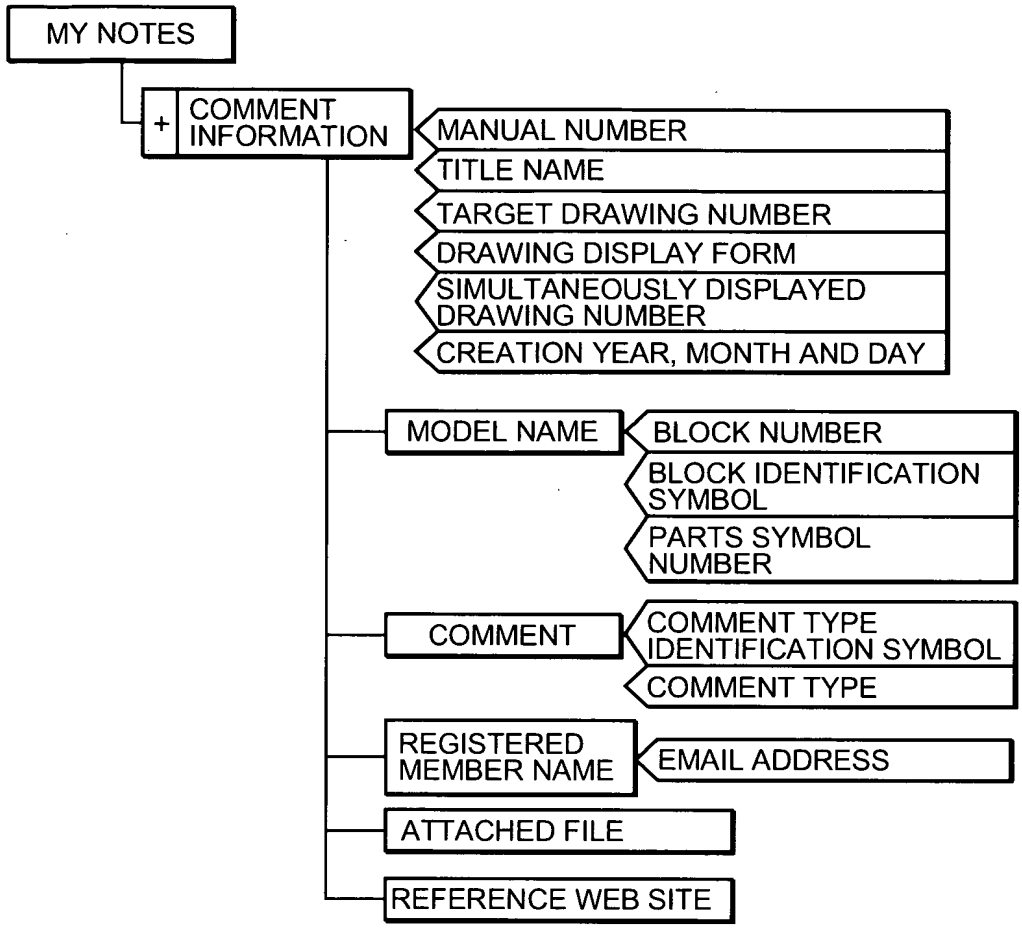

MY NOTES
+
COMMENT INFORMATION
MANUAL NUMBER
TITLE NAME
TARGET DRAWING NUMBER
DRAWING DISPLAY FORM
SIMULTANEOUSLY DISPLAYED DRAWING NUMBER
CREATION YEAR, MONTH AND DAY
MODEL NAME
BLOCK NUMBER
BLOCK IDENTIFICATION SYMBOL
PARTS SYMBOL NUMBER
COMMENT
COMMENT TYPE IDENTIFICATION SYMBOL
COMMENT TYPE
REGISTERED MEMBER NAME
EMAIL ADDRESS
ATTACHED FILE
REFERENCE WEB SITE

FIG. 9

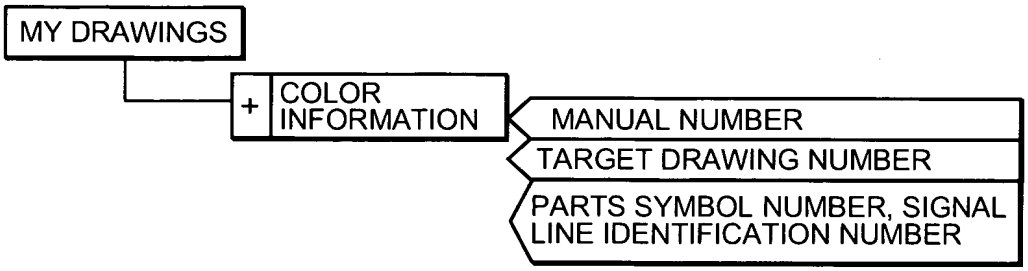

MY DRAWINGS
+
COLOR INFORMATION
MANUAL NUMBER
TARGET DRAWING NUMBER
PARTS SYMBOL NUMBER, SIGNAL LINE IDENTIFICATION NUMBER

FIG. 10

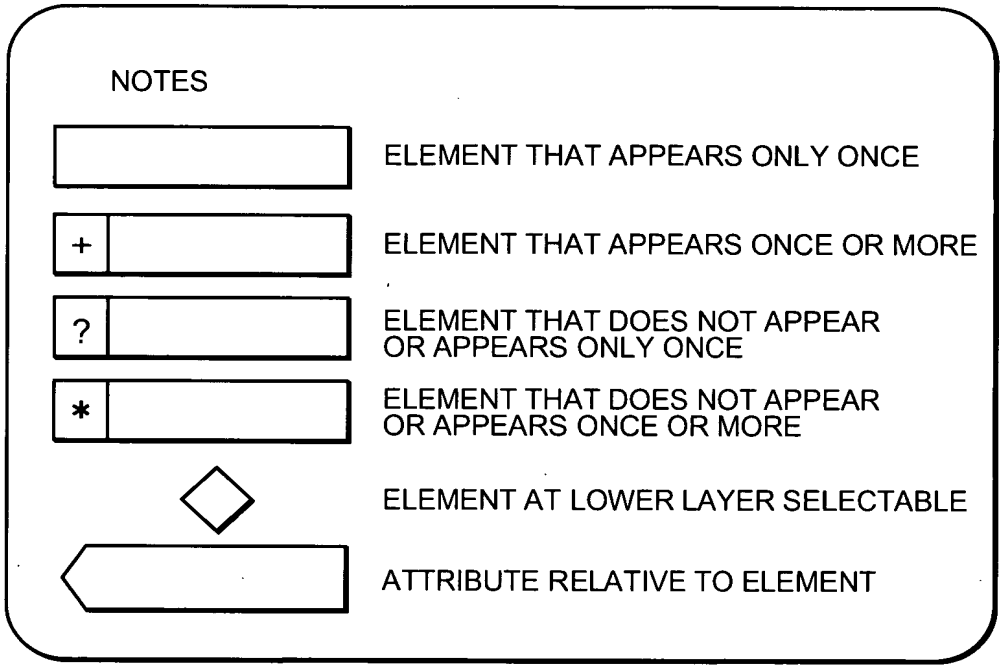

NOTES
ELEMENT THAT APPEARS ONLY ONCE
+
ELEMENT THAT APPEARS ONCE OR MORE
?
ELEMENT THAT DOES NOT APPEAR OR APPEARS ONLY ONCE
*
ELEMENT THAT DOES NOT APPEAR OR APPEARS ONCE OR MORE
ELEMENT AT LOWER LAYER SELECTABLE
ATTRIBUTE RELATIVE TO ELEMENT

FIG. 11

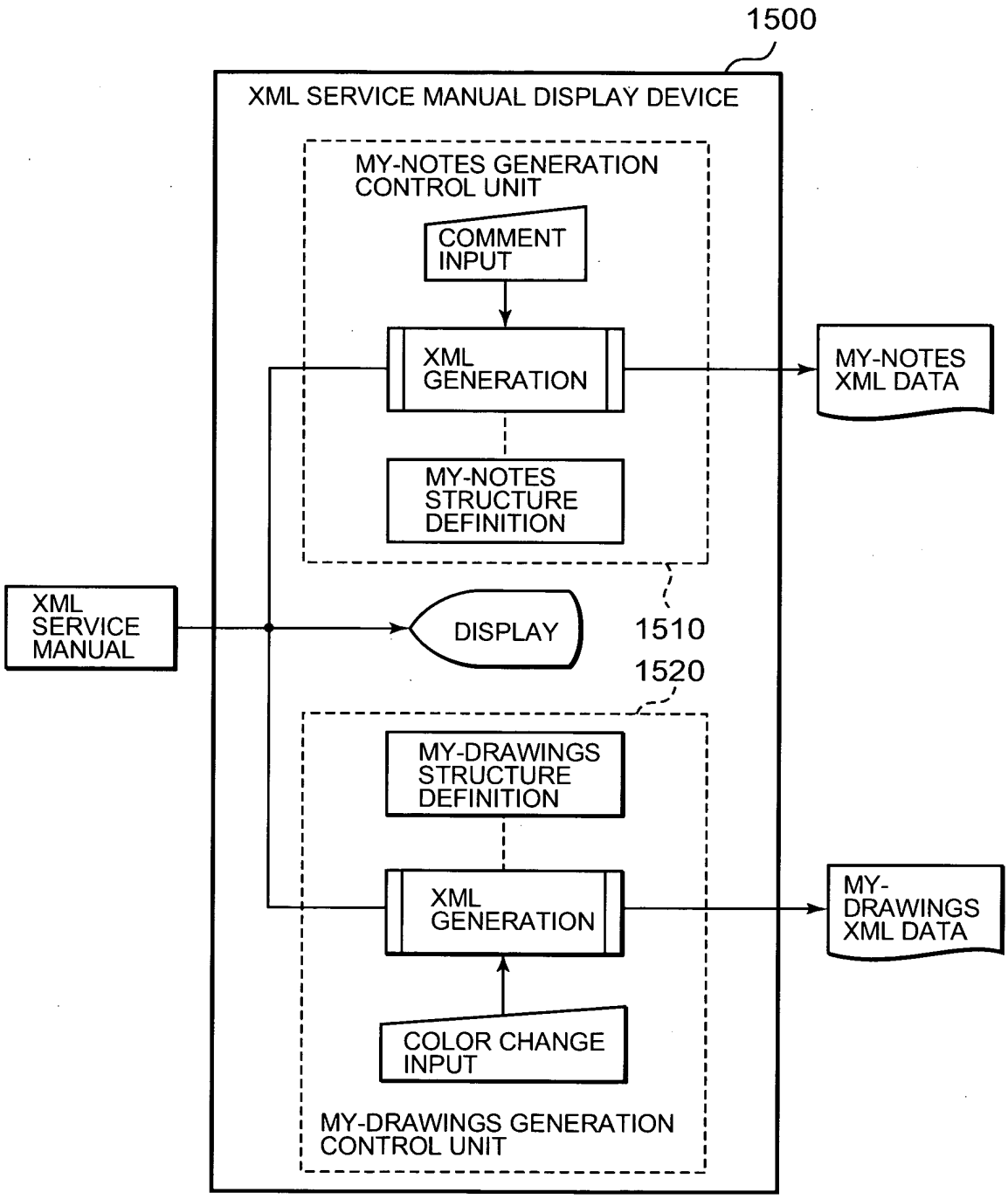

1500
XML SERVICE MANUAL DISPLAY DEVICE
MY-NOTES GENERATION CONTROL UNIT
COMMENT INPUT
XML GENERATION
MY-NOTES XML DATA
MY-NOTES STRUCTURE DEFINITION
XML SERVICE MANUAL
DISPLAY
1510
1520
MY-DRAWINGS STRUCTURE DEFINITION
XML GENERATION
MY-DRAWINGS XML DATA
COLOR CHANGE INPUT
MY-DRAWINGS GENERATION CONTROL UNIT

FIG. 12

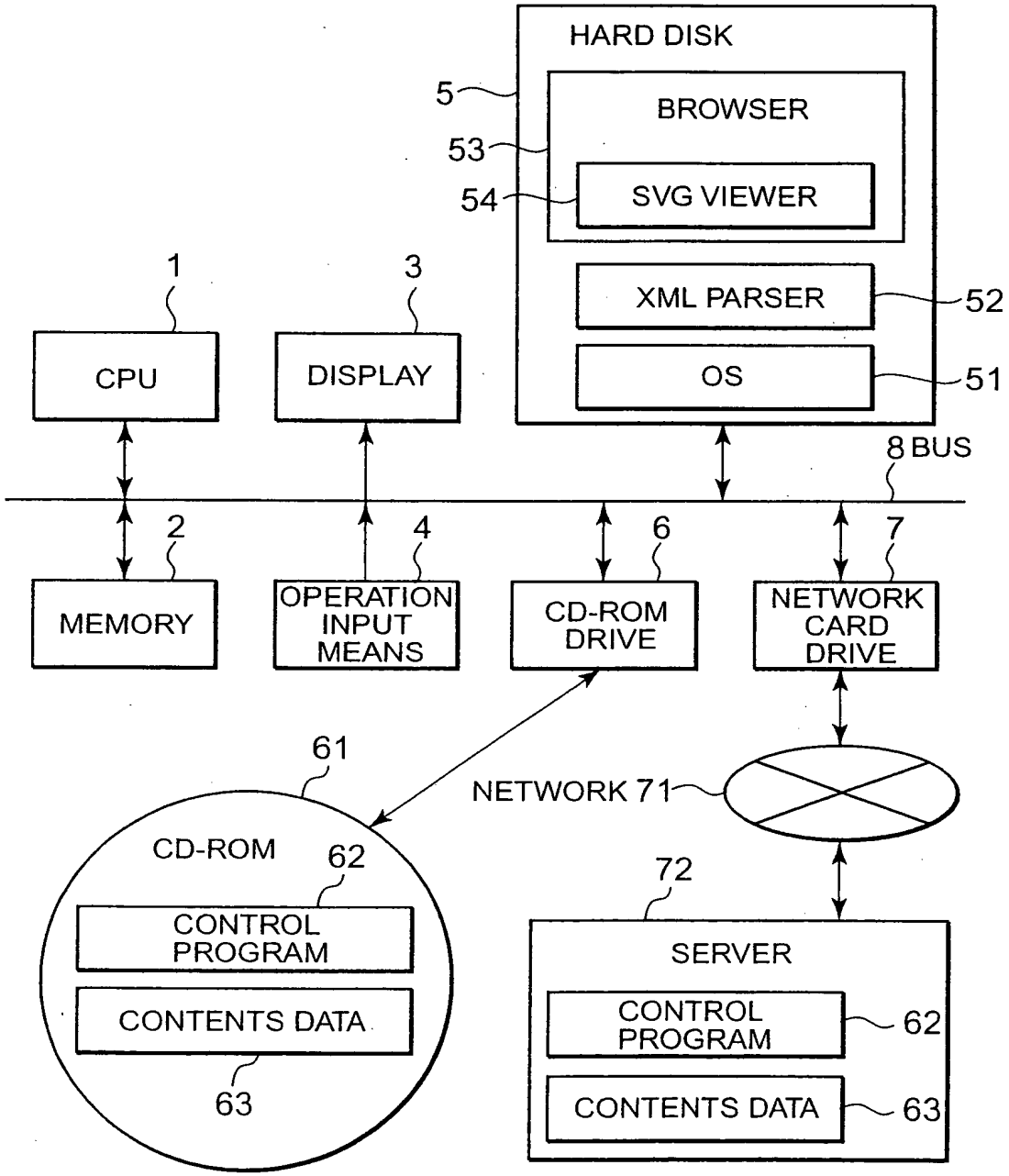

HARD DISK
5
BROWSER
53
54
SVG VIEWER
XML PARSER
52
OS
51
1
CPU
3
DISPLAY
8 BUS
2
MEMORY
4
OPERATION INPUT MEANS
6
CD-ROM DRIVE
7
NETWORK CARD DRIVE
61
NETWORK 71
CD-ROM
62
CONTROL PROGRAM
CONTENTS DATA
63
72
SERVER
CONTROL PROGRAM
62
CONTENTS DATA
63

FIG. 13

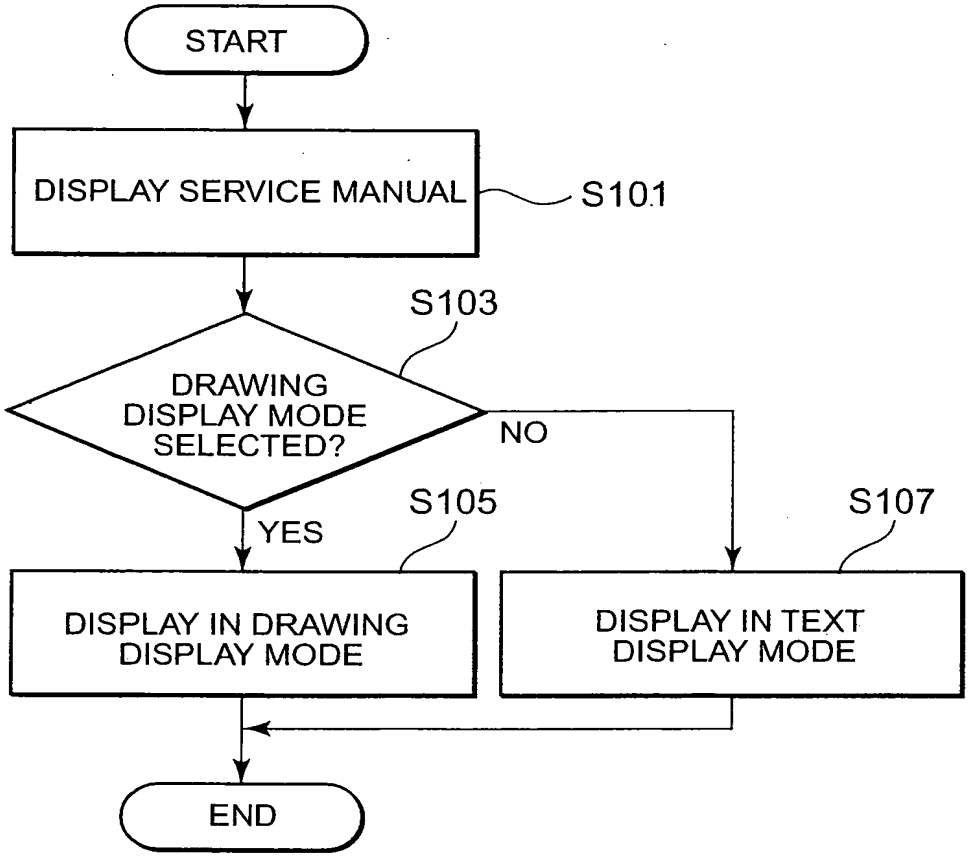

START
DISPLAY SERVICE MANUAL
S101
S103
DRAWING DISPLAY MODE SELECTED?
NO
YES
S105
S107
DISPLAY IN DRAWING DISPLAY MODE
DISPLAY IN TEXT DISPLAY MODE
END

FIG. 14

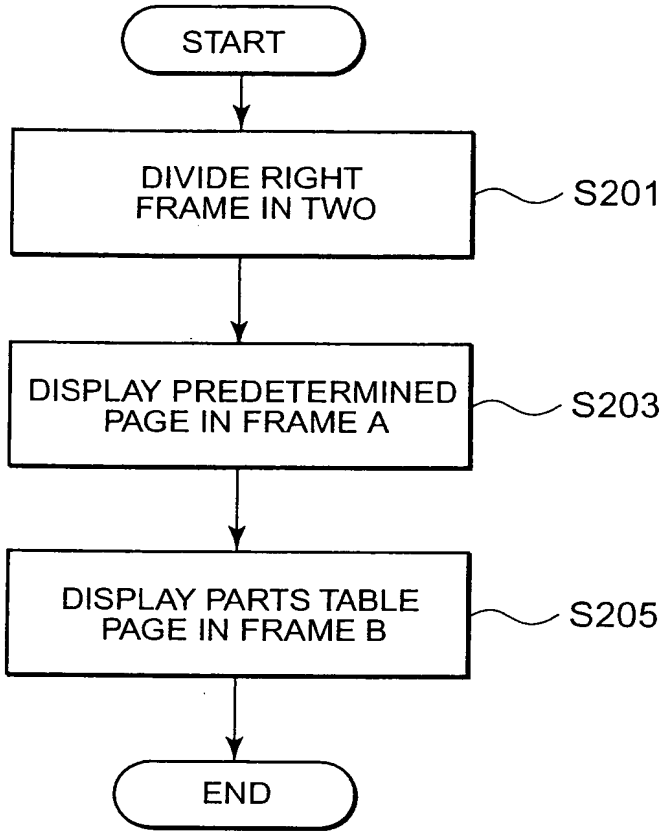

START
DIVIDE RIGHT FRAME IN TWO
S201
DISPLAY PREDETERMINED PAGE IN FRAME A
S203
DISPLAY PARTS TABLE PAGE IN FRAME B
S205
END

FIG. 15

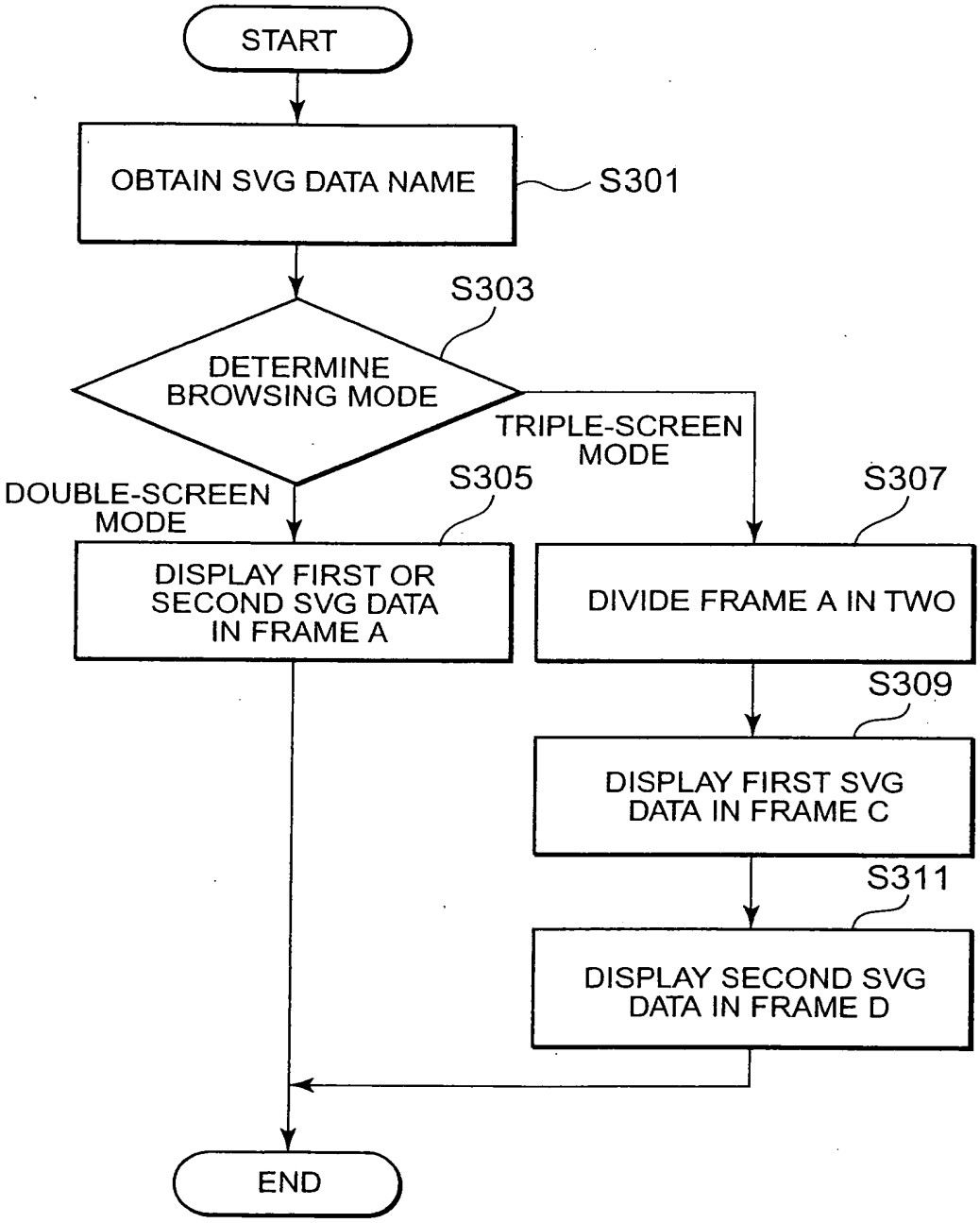

START
OBTAIN SVG DATA NAME
S301
S303
DETERMINE BROWSING MODE
TRIPLE-SCREEN MODE
DOUBLE-SCREEN MODE
S305
S307
DISPLAY FIRST OR SECOND SVG DATA IN FRAME A
DIVIDE FRAME A IN TWO
S309
DISPLAY FIRST SVG DATA IN FRAME C
S311
DISPLAY SECOND SVG DATA IN FRAME D
END

FIG. 16

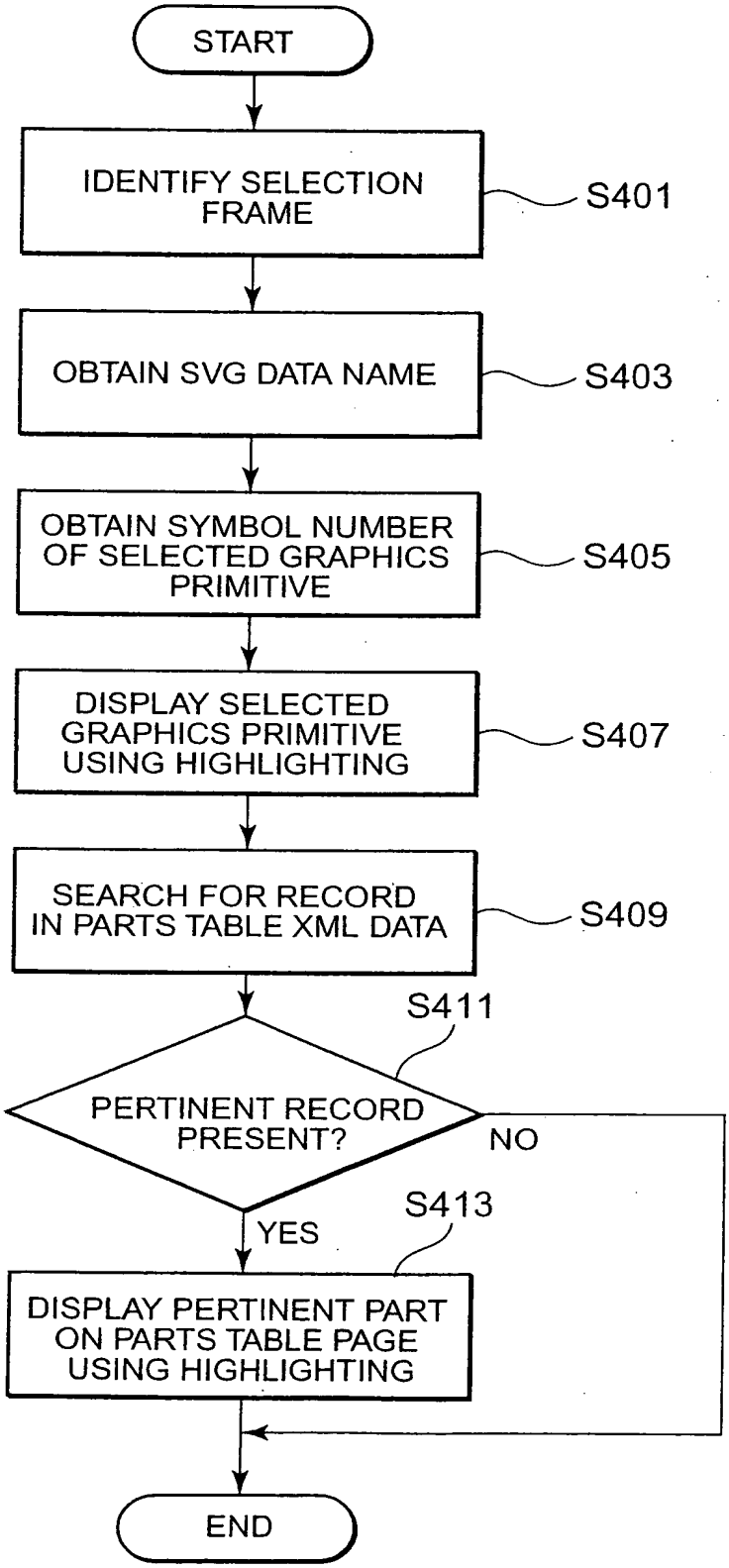

START
IDENTIFY SELECTION FRAME
S401
OBTAIN SVG DATA NAME
S403
OBTAIN SYMBOL NUMBER OF SELECTED GRAPHICS PRIMITIVE
S405
DISPLAY SELECTED GRAPHICS PRIMITIVE USING HIGHLIGHTING
S407
SEARCH FOR RECORD IN PARTS TABLE XML DATA
S409
S411
PERTINENT RECORD PRESENT?
NO
YES
S413
DISPLAY PERTINENT PART ON PARTS TABLE PAGE USING HIGHLIGHTING
END

FIG. 17

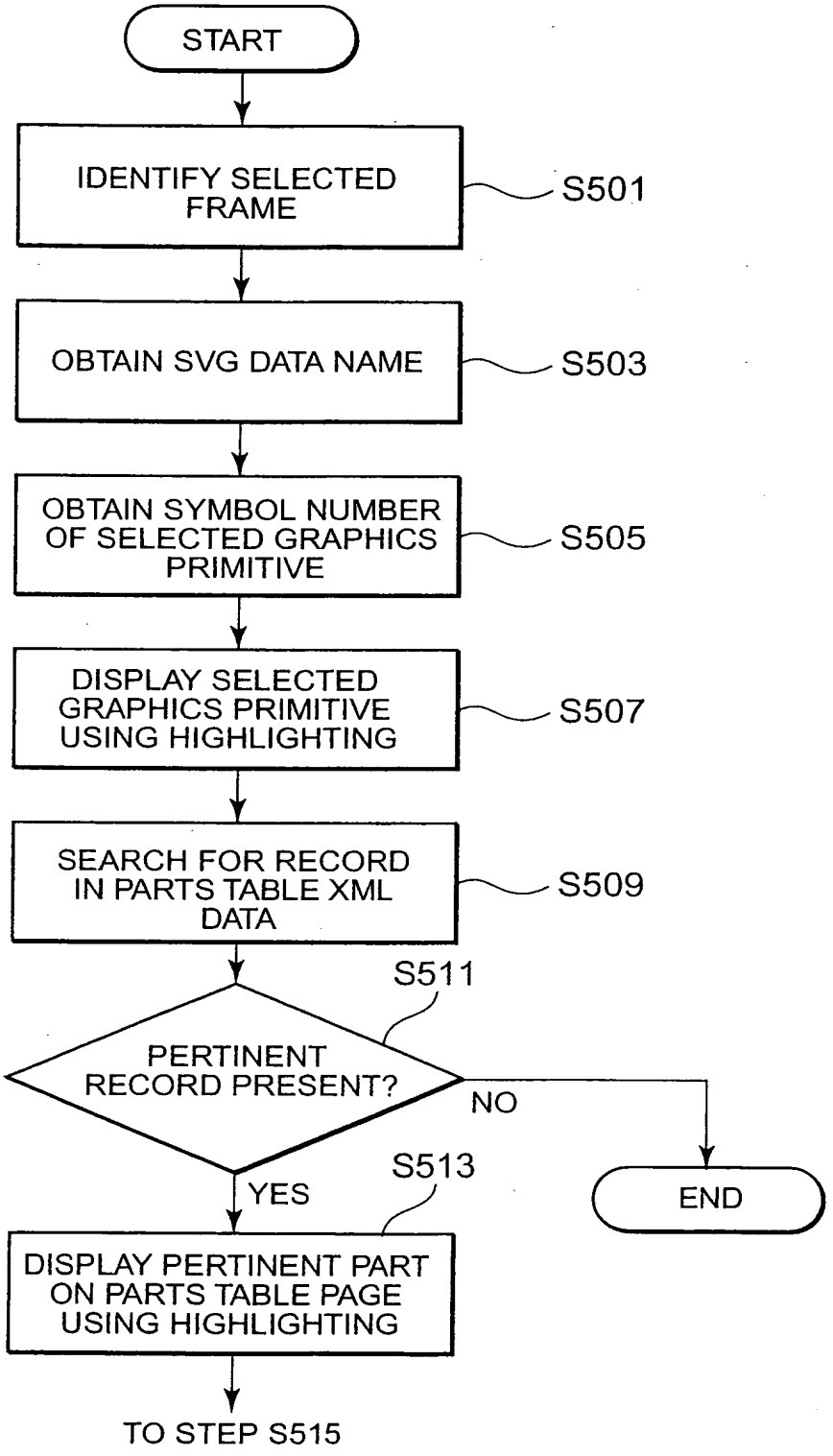

START
IDENTIFY SELECTED FRAME
S501
OBTAIN SVG DATA NAME
S503
OBTAIN SYMBOL NUMBER OF SELECTED GRAPHICS PRIMITIVE
S505
DISPLAY SELECTED GRAPHICS PRIMITIVE USING HIGHLIGHTING
S507
SEARCH FOR RECORD IN PARTS TABLE XML DATA
S509
S511
PERTINENT RECORD PRESENT?
NO
END
YES
S513
DISPLAY PERTINENT PART ON PARTS TABLE PAGE USING HIGHLIGHTING
TO STEP S515

FIG. 18

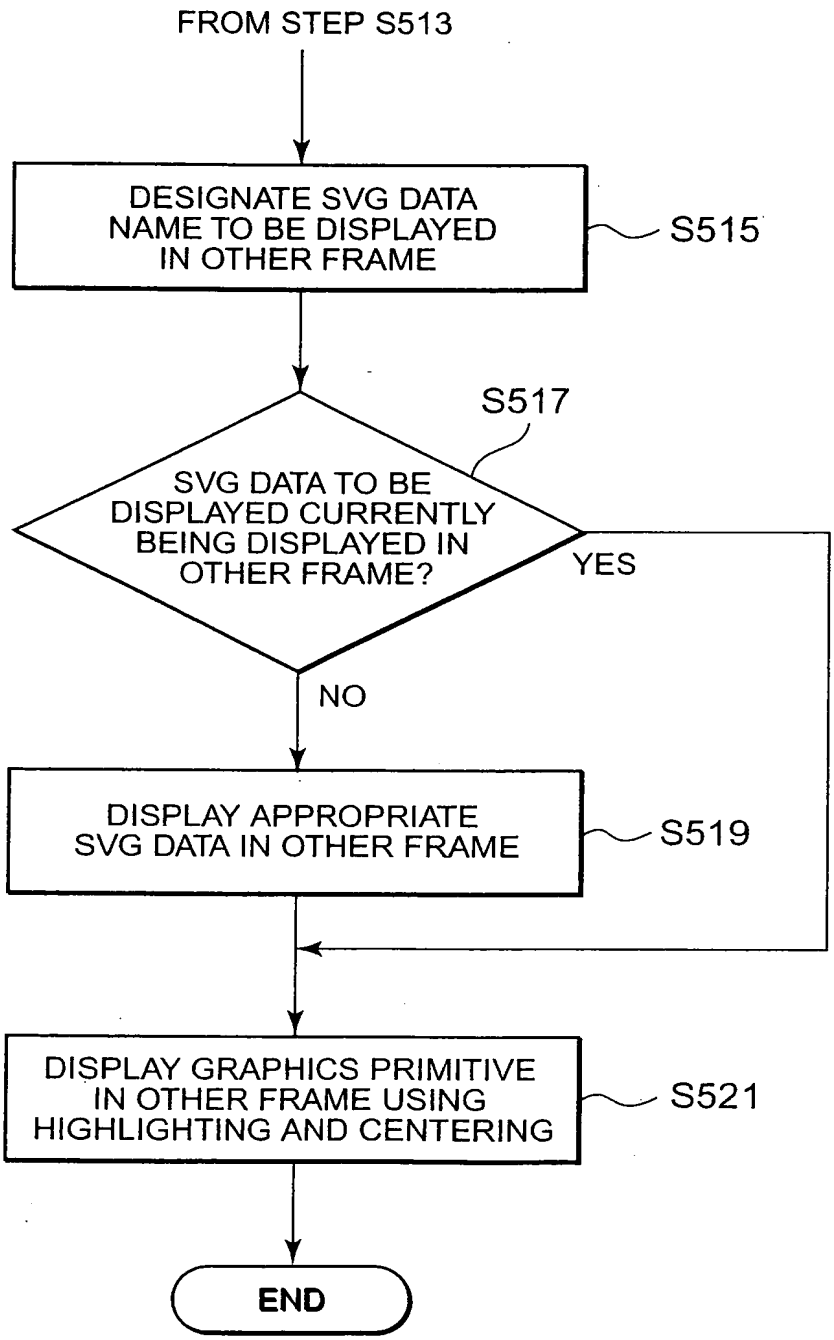

FROM STEP S513
DESIGNATE SVG DATA NAME TO BE DISPLAYED IN OTHER FRAME
S515
S517
SVG DATA TO BE DISPLAYED CURRENTLY BEING DISPLAYED IN OTHER FRAME?
YES
NO
DISPLAY APPROPRIATE SVG DATA IN OTHER FRAME
S519
DISPLAY GRAPHICS PRIMITIVE IN OTHER FRAME USING HIGHLIGHTING AND CENTERING
S521
END

FIG. 19

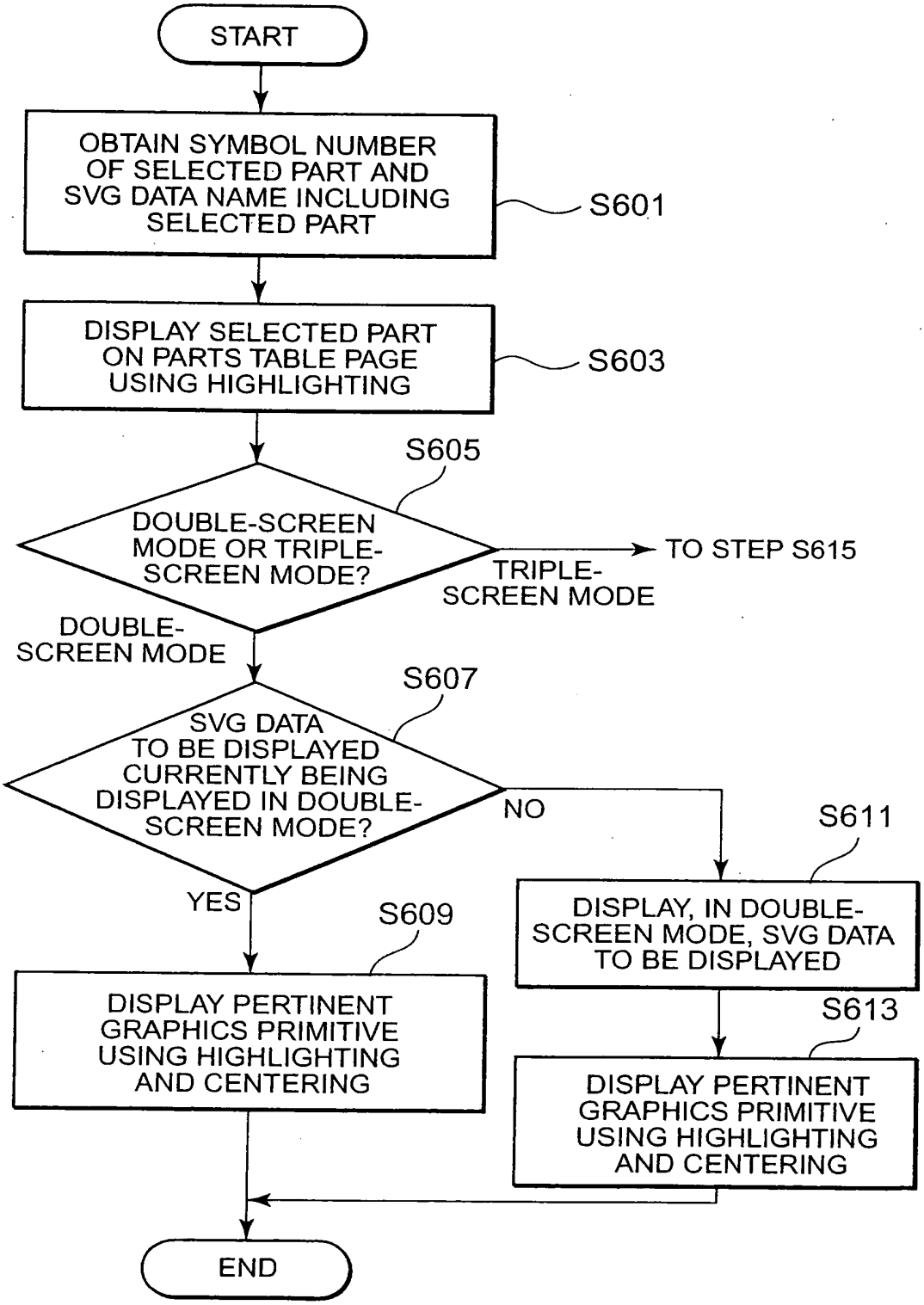

START
OBTAIN SYMBOL NUMBER OF SELECTED PART AND SVG DATA NAME INCLUDING SELECTED PART
S601
DISPLAY SELECTED PART ON PARTS TABLE PAGE USING HIGHLIGHTING
S603
S605
DOUBLE-SCREEN MODE OR TRIPLE-SCREEN MODE?
TRIPLE-SCREEN MODE
TO STEP S615
DOUBLE-SCREEN MODE
S607
SVG DATA TO BE DISPLAYED CURRENTLY BEING DISPLAYED IN DOUBLE-SCREEN MODE?
NO
YES
S611
DISPLAY, IN DOUBLE-SCREEN MODE, SVG DATA TO BE DISPLAYED
S609
DISPLAY PERTINENT GRAPHICS PRIMITIVE USING HIGHLIGHTING AND CENTERING
S613
DISPLAY PERTINENT GRAPHICS PRIMITIVE USING HIGHLIGHTING AND CENTERING
END

FIG. 20

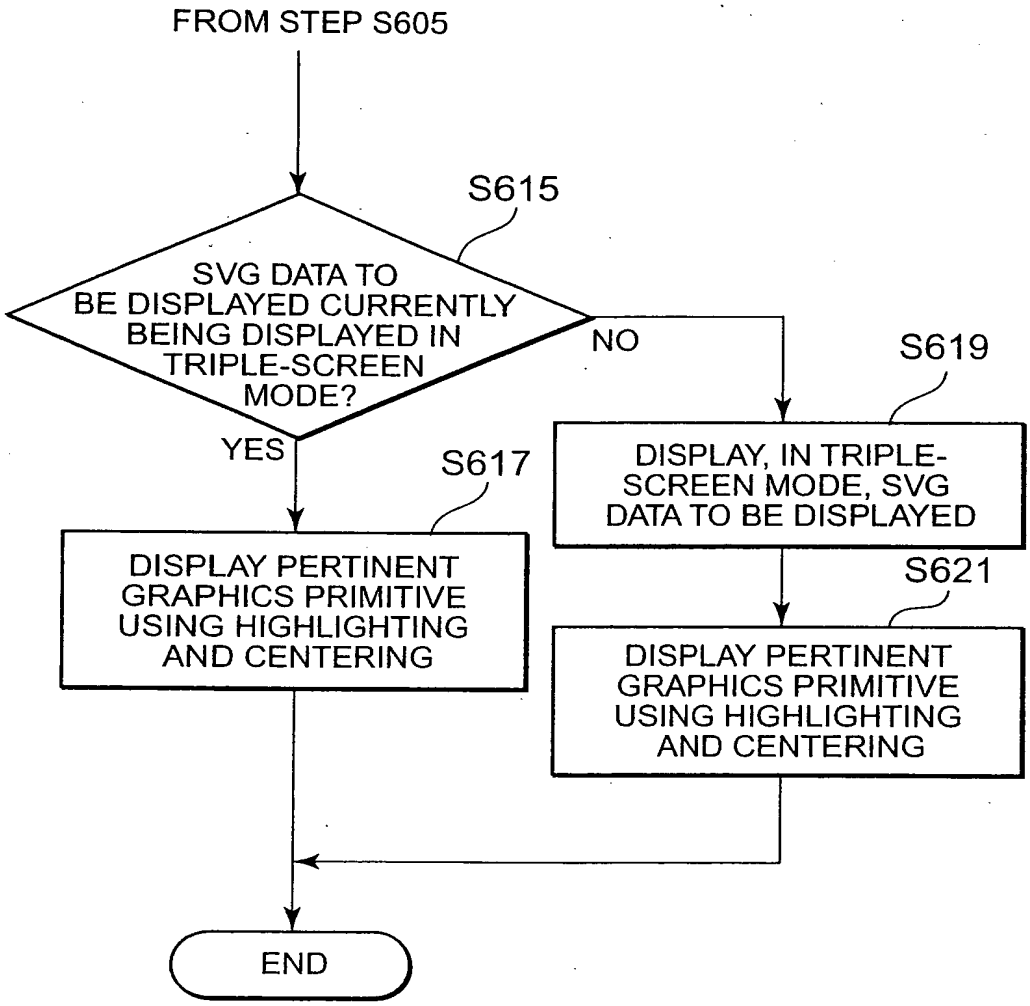

FROM STEP S605
S615
SVG DATA TO BE DISPLAYED CURRENTLY BEING DISPLAYED IN TRIPLE-SCREEN MODE?
NO
YES
S619
DISPLAY, IN TRIPLE-SCREEN MODE, SVG DATA TO BE DISPLAYED
S617
DISPLAY PERTINENT GRAPHICS PRIMITIVE USING HIGHLIGHTING AND CENTERING
S621
DISPLAY PERTINENT GRAPHICS PRIMITIVE USING HIGHLIGHTING AND CENTERING
END

FIG. 21

INDEX XML DATA

CIRCUIT	BROWSING MODE	FIRST SVG DATA NAME	SECOND SVG DATA NAME
SERVO CIRCUIT	1	A1234_s001	A1234_p001
AV DECODER CIRCUIT	1	A1234_s002	A1234_p001
FLASH ROM CIRCUIT	1	A1234_s003	A1234_p002
VIDEO OUTPUT CIRCUIT	1	A1234_s004	A1234_p003
DIGITAL OUTPUT CIRCUIT	3	-	A1234_p003
SYSTEM CONFIGURATION CIRCUIT	0	A1234_s006	-
⟆	⟆	⟆	⟆

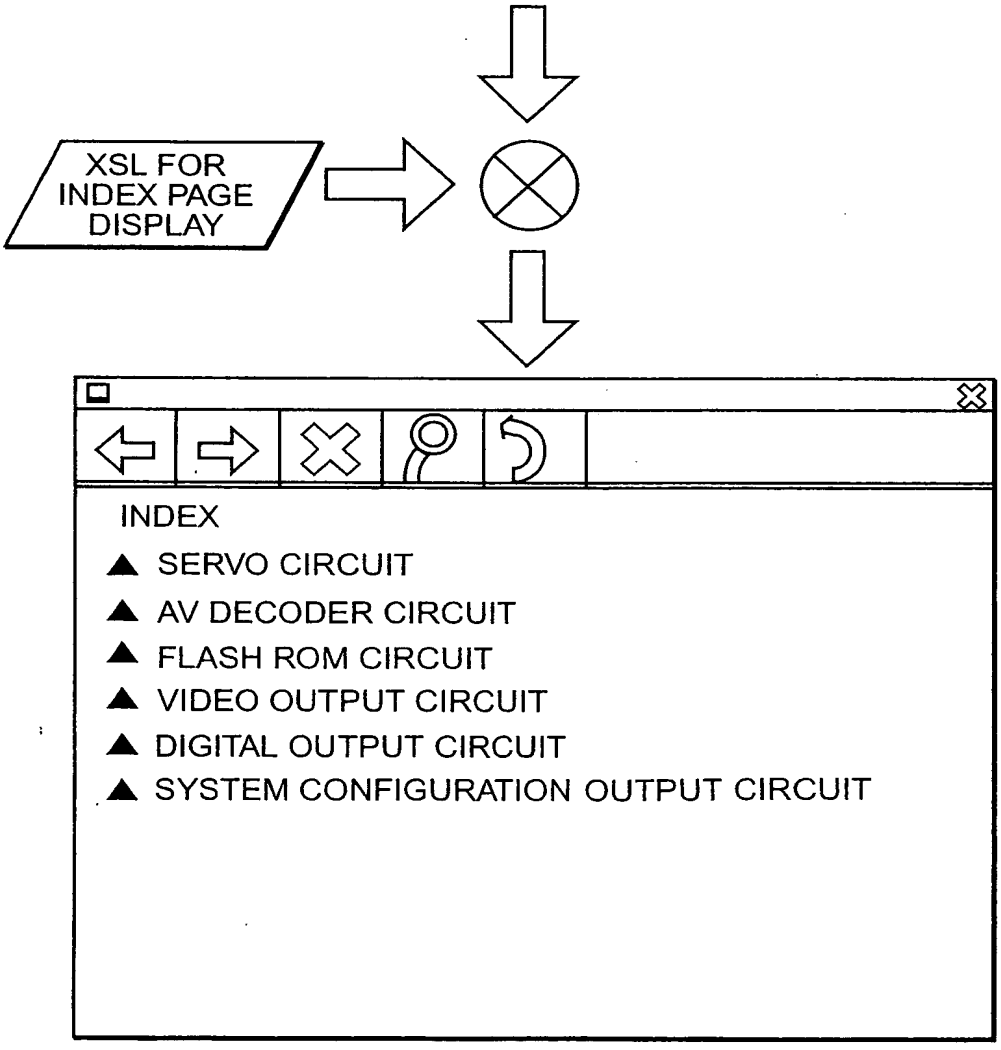
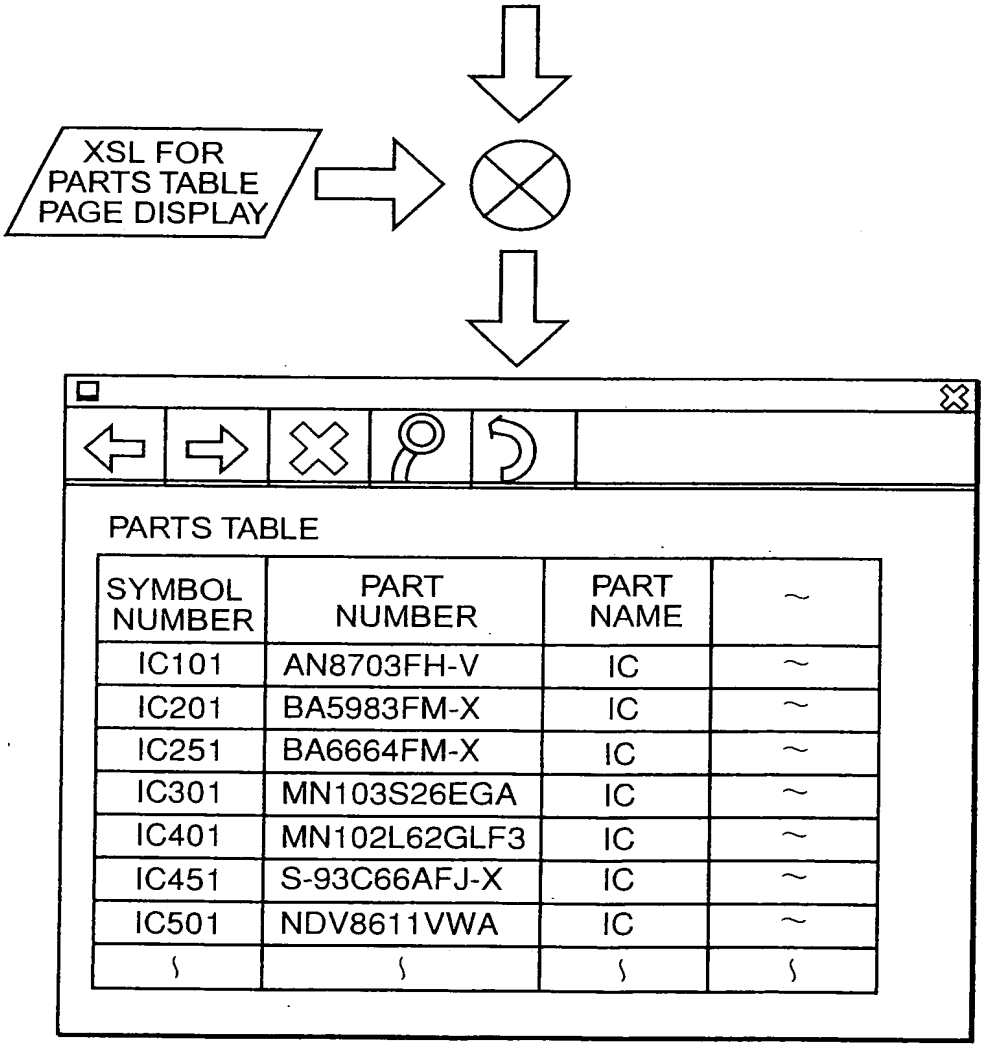


FIG. 22

PARTS TABLE XML DATA

RECORD	SYMBOL NUMBER	PART NUMBER	PART NAME	~	FIRST SVG DATA NAME	SECOND SVG DATA NAME
1	IC101	AN8703FH-V	IC	~	A1234_s001	A1234_p001
2	IC201	BA5983FM-X	IC	~	A1234_s001	A1234_p001
3	IC251	BA6664FM-X	IC	~	A1234_s001	A1234_p001
4	IC301	MN103S26EGA	IC	~	A1234_s002	A1234_p001
5	IC401	MN102L62GLF3	IC	~	A1234_s002	A1234_p001
6	IC451	S-93C66AFJ-X	IC	~	A1234_s003	A1234_p002
7	IC501	NDV8611VWA	IC	~	A1234_s003	A1234_p002
⟆	⟆	⟆	⟆	⟆	⟆	⟆



SYMBOL NUMBER	PART NUMBER	PART NAME	~
IC101	AN8703FH-V	IC	~
IC201	BA5983FM-X	IC	~
IC251	BA6664FM-X	IC	~
IC301	MN103S26EGA	IC	~
IC401	MN102L62GLF3	IC	~
IC451	S-93C66AFJ-X	IC	~
IC501	NDV8611VWA	IC	~
⟆	⟆	⟆	⟆

FIG. 23

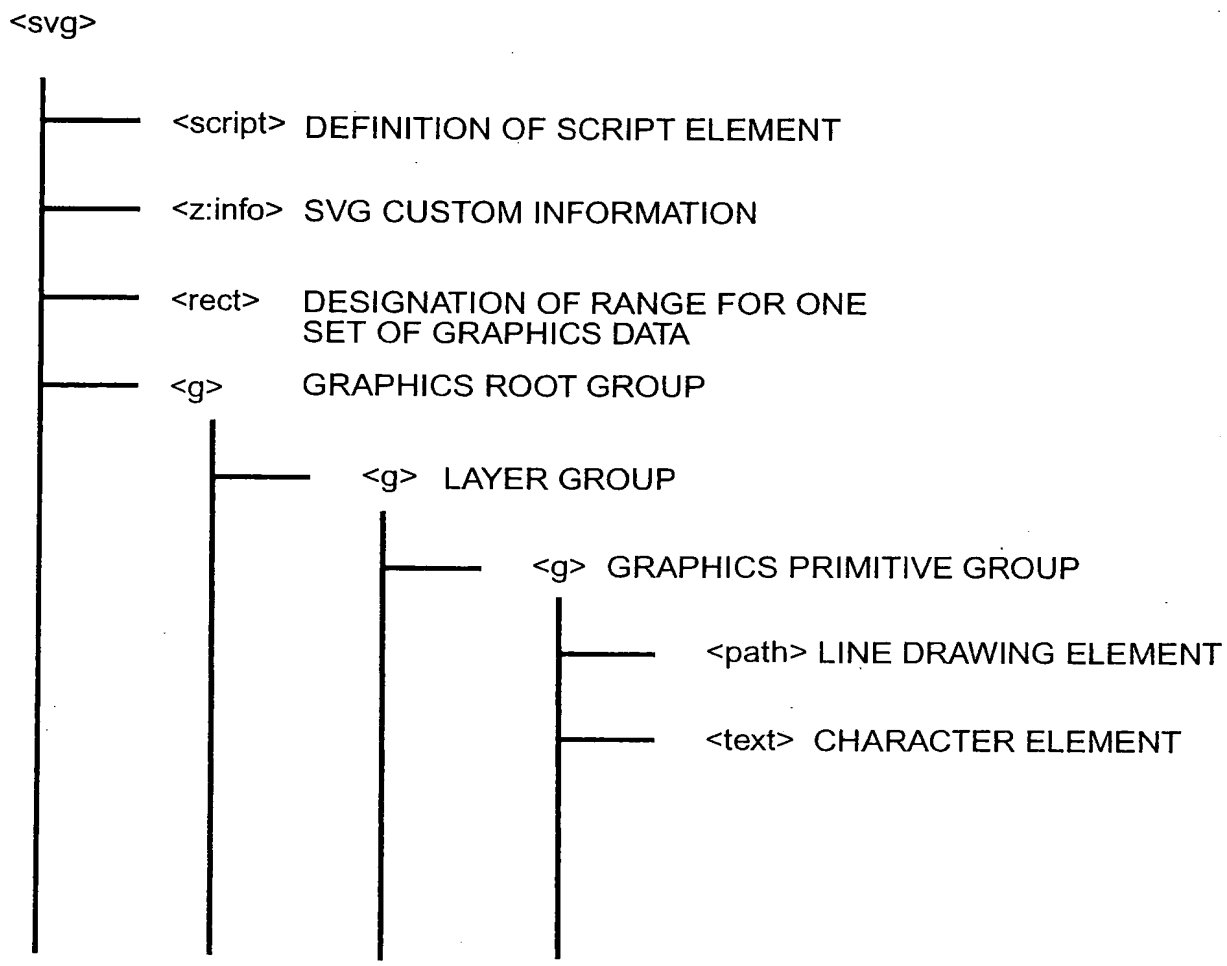

<svg>
<script> DEFINITION OF SCRIPT ELEMENT
<z:info> SVG CUSTOM INFORMATION
<rect> DESIGNATION OF RANGE FOR ONE SET OF GRAPHICS DATA
<g> GRAPHICS ROOT GROUP
<g> LAYER GROUP
<g> GRAPHICS PRIMITIVE GROUP
<path> LINE DRAWING ELEMENT
<text> CHARACTER ELEMENT

FIG. 24

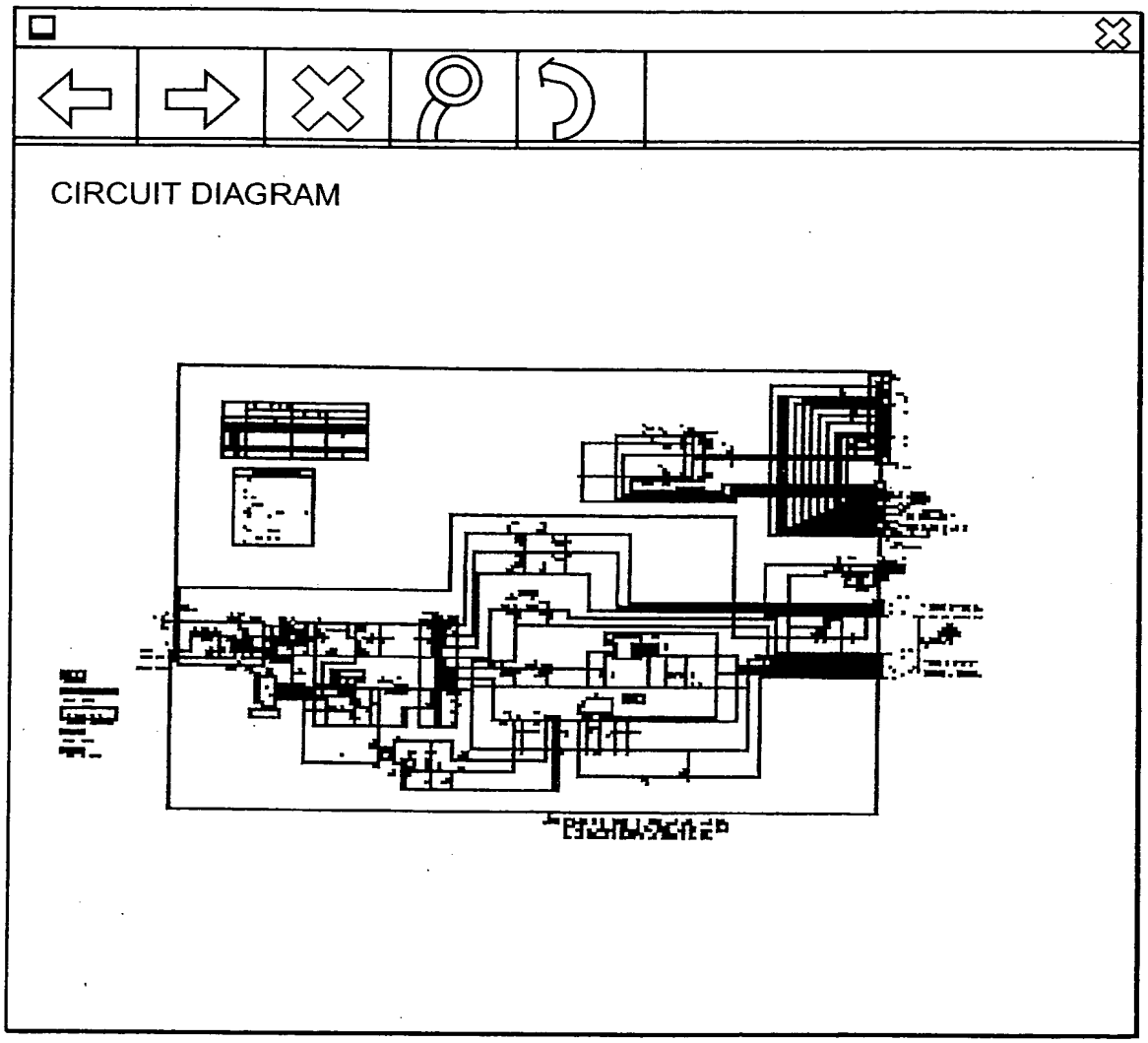


FIG. 25

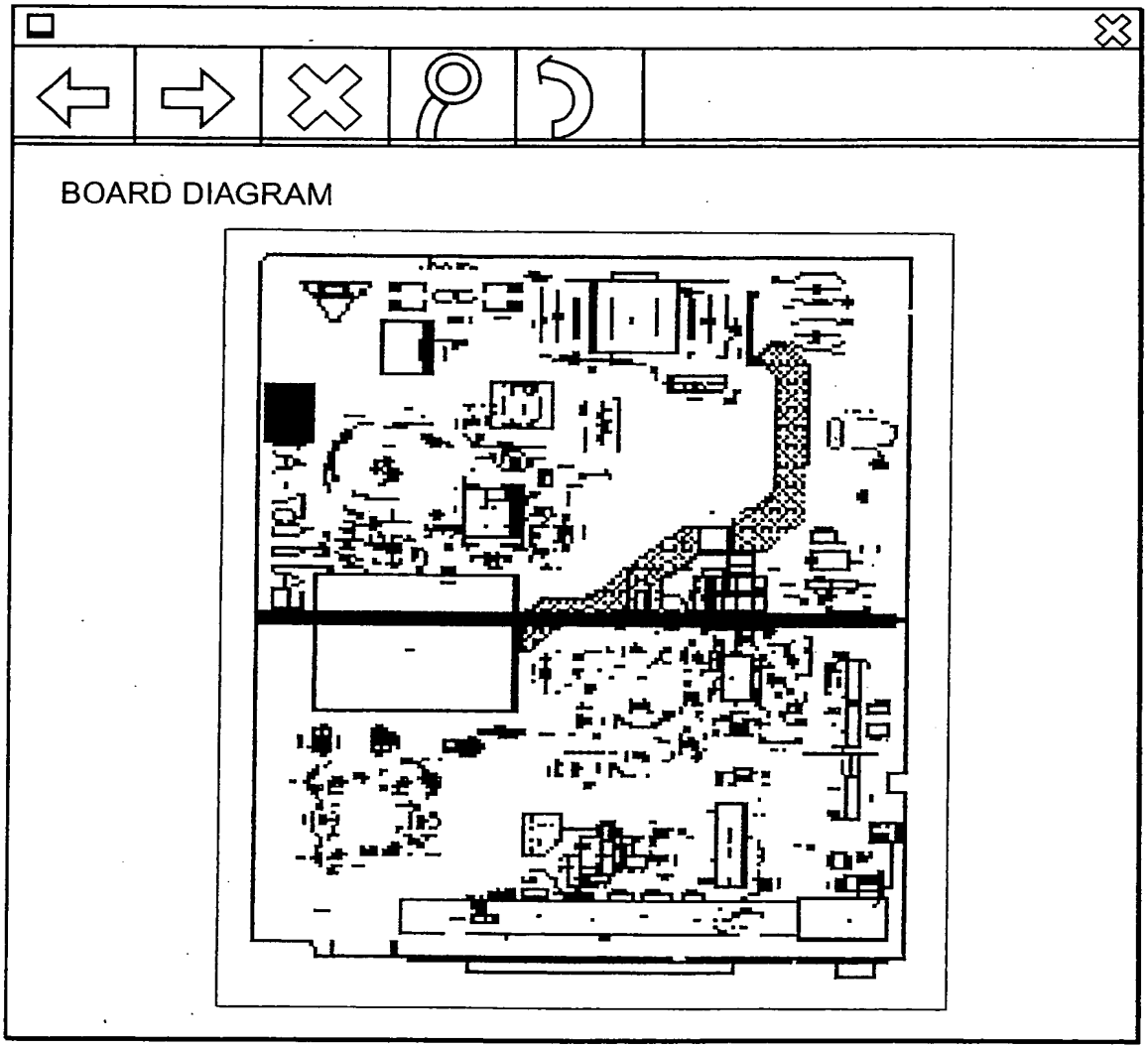


FIG. 26

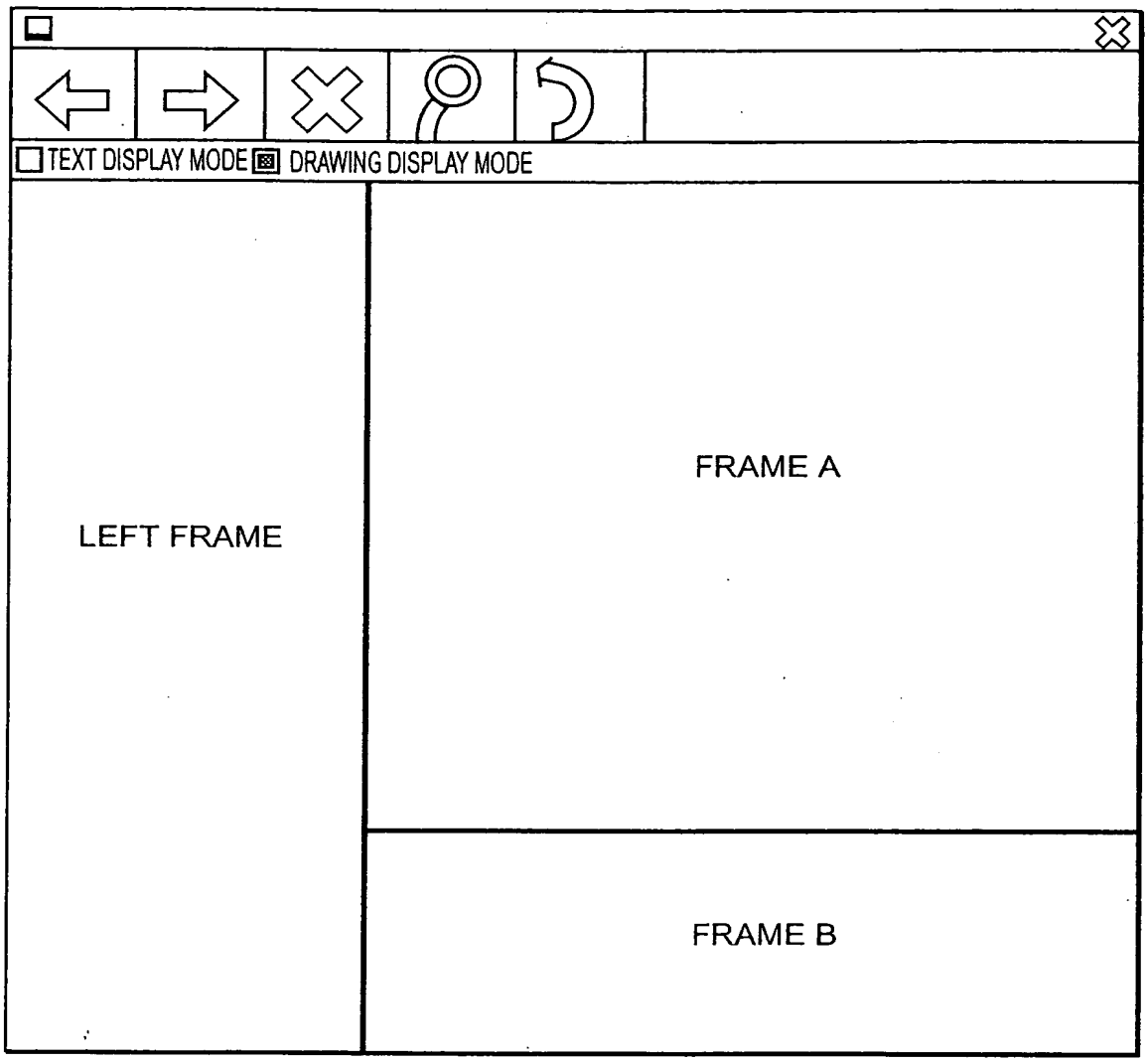

TEXT DISPLAY MODE
DRAWING DISPLAY MODE
LEFT FRAME
FRAME A
FRAME B

FIG. 27

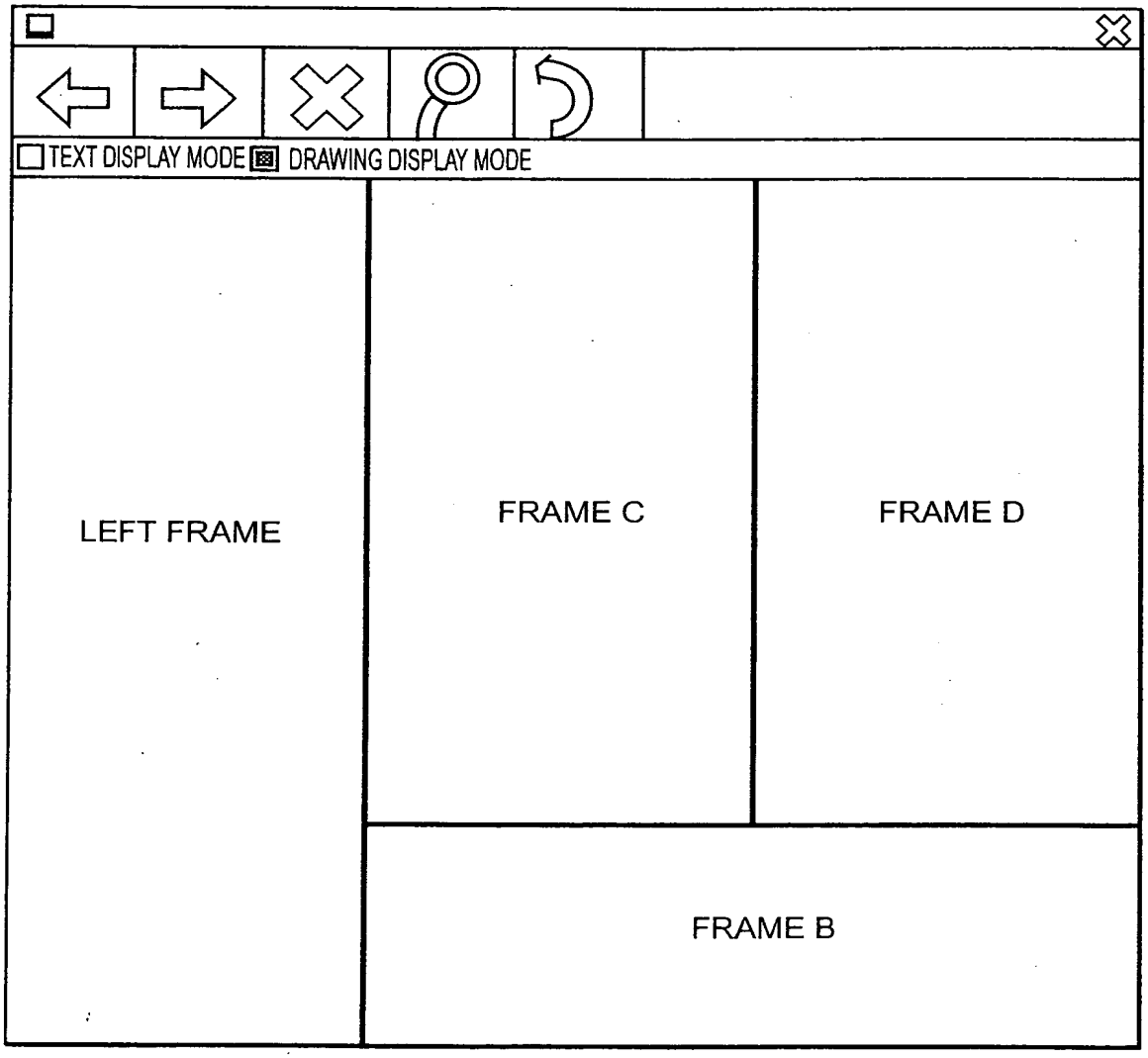

TEXT DISPLAY MODE
DRAWING DISPLAY MODE
LEFT FRAME
FRAME C
FRAME D
FRAME B

FIG. 28

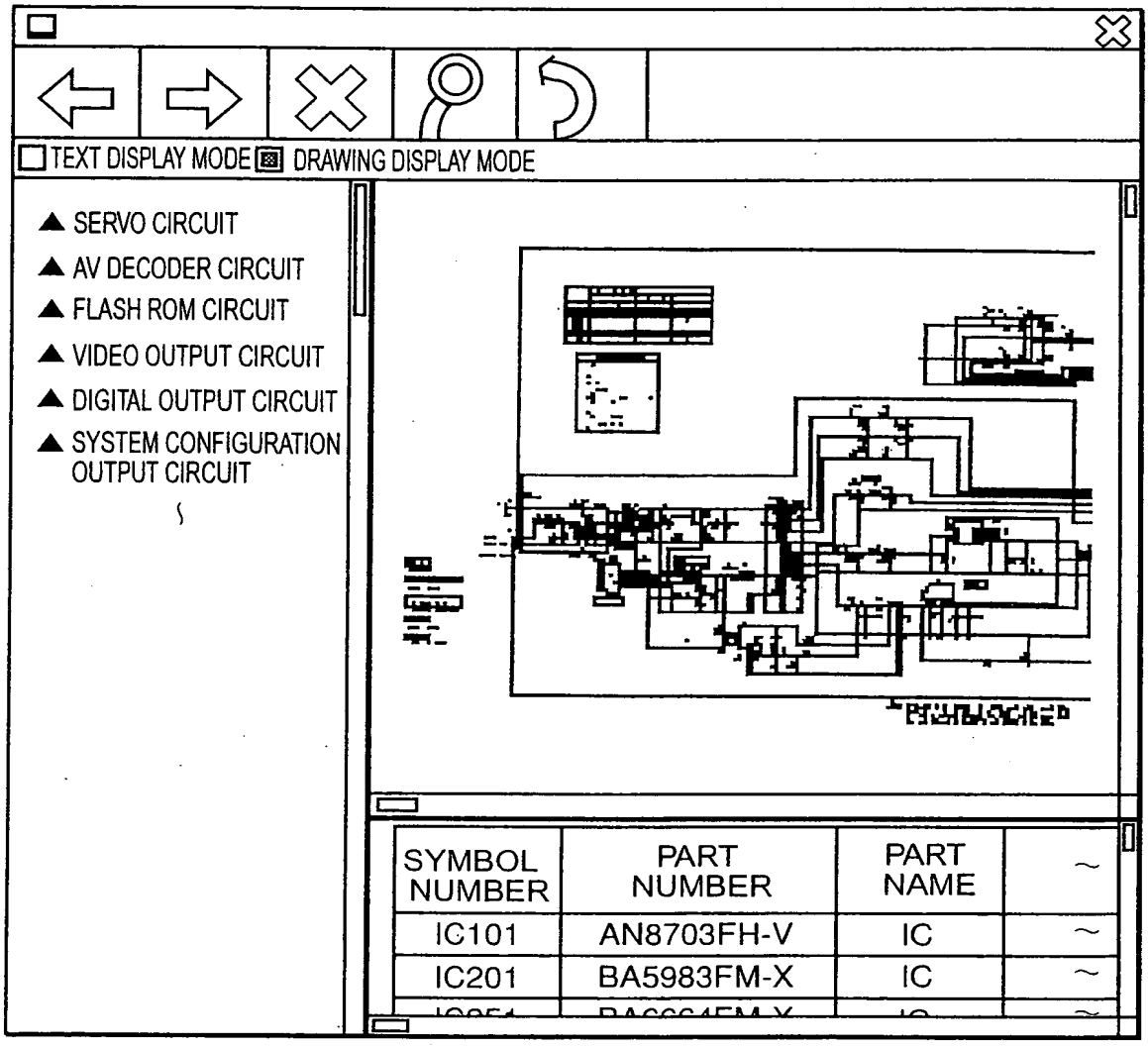

TEXT DISPLAY MODE
DRAWING DISPLAY MODE
▲ SERVO CIRCUIT
▲ AV DECODER CIRCUIT
▲ FLASH ROM CIRCUIT
▲ VIDEO OUTPUT CIRCUIT
▲ DIGITAL OUTPUT CIRCUIT
▲ SYSTEM CONFIGURATION OUTPUT CIRCUIT
SYMBOL NUMBER
PART NUMBER
PART NAME
IC101
AN8703FH-V
IC
IC201
BA5983FM-X
IC

FIG. 29

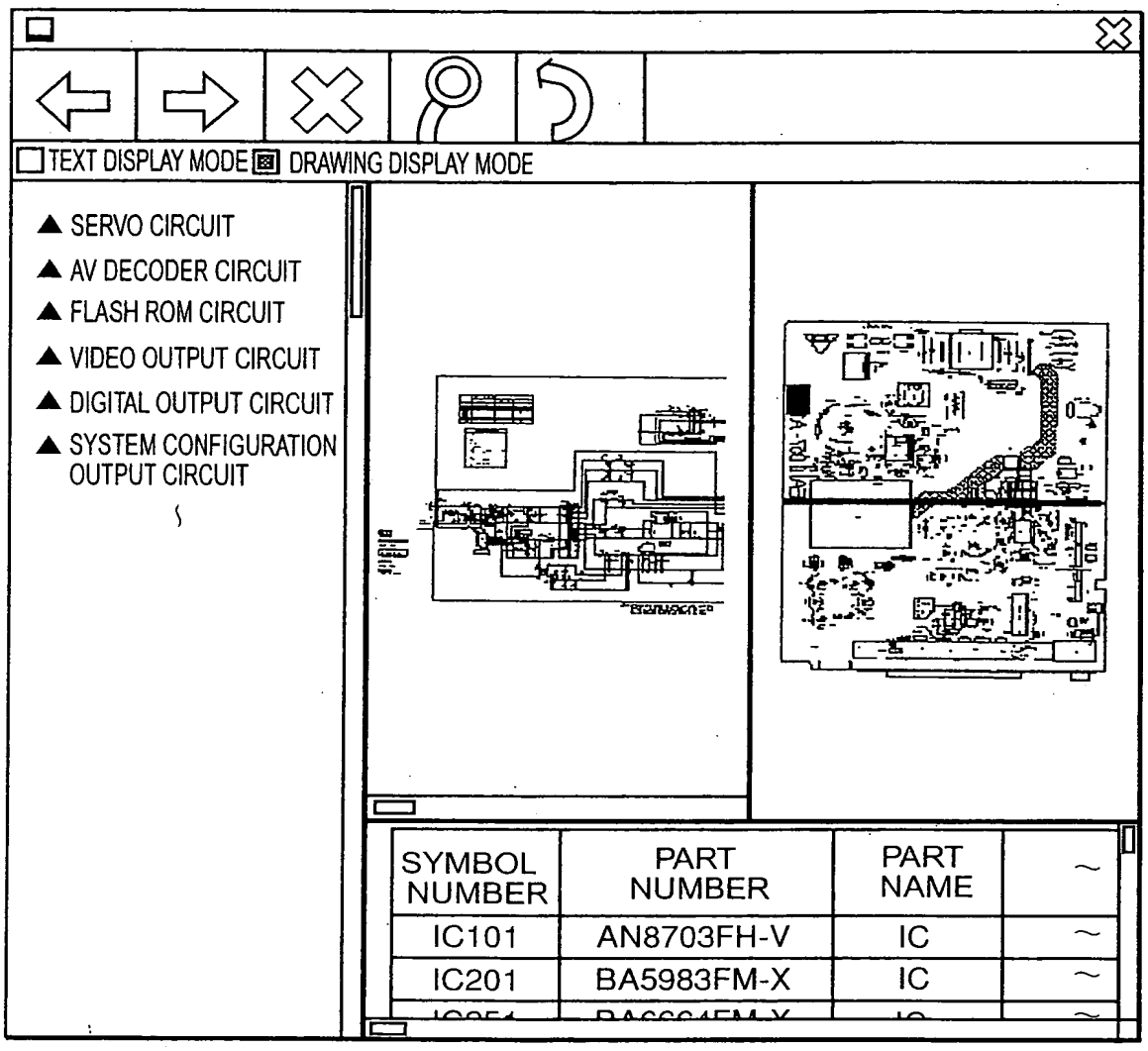

TEXT DISPLAY MODE
DRAWING DISPLAY MODE
▲ SERVO CIRCUIT
▲ AV DECODER CIRCUIT
▲ FLASH ROM CIRCUIT
▲ VIDEO OUTPUT CIRCUIT
▲ DIGITAL OUTPUT CIRCUIT
▲ SYSTEM CONFIGURATION OUTPUT CIRCUIT
SYMBOL NUMBER
PART NUMBER
PART NAME
IC101
AN8703FH-V
IC
IC201
BA5983FM-X
IC

FIG. 30

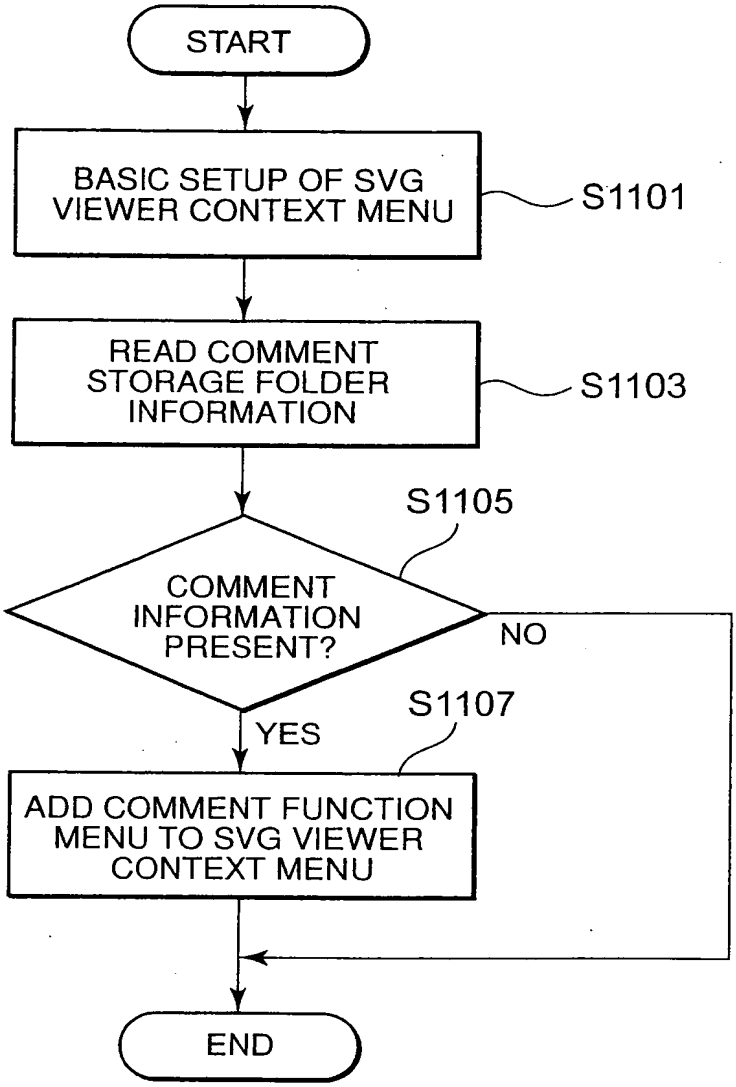

START
BASIC SETUP OF SVG VIEWER CONTEXT MENU
S1101
READ COMMENT STORAGE FOLDER INFORMATION
S1103
S1105
COMMENT INFORMATION PRESENT?
NO
YES
S1107
ADD COMMENT FUNCTION MENU TO SVG VIEWER CONTEXT MENU
END

FIG. 31

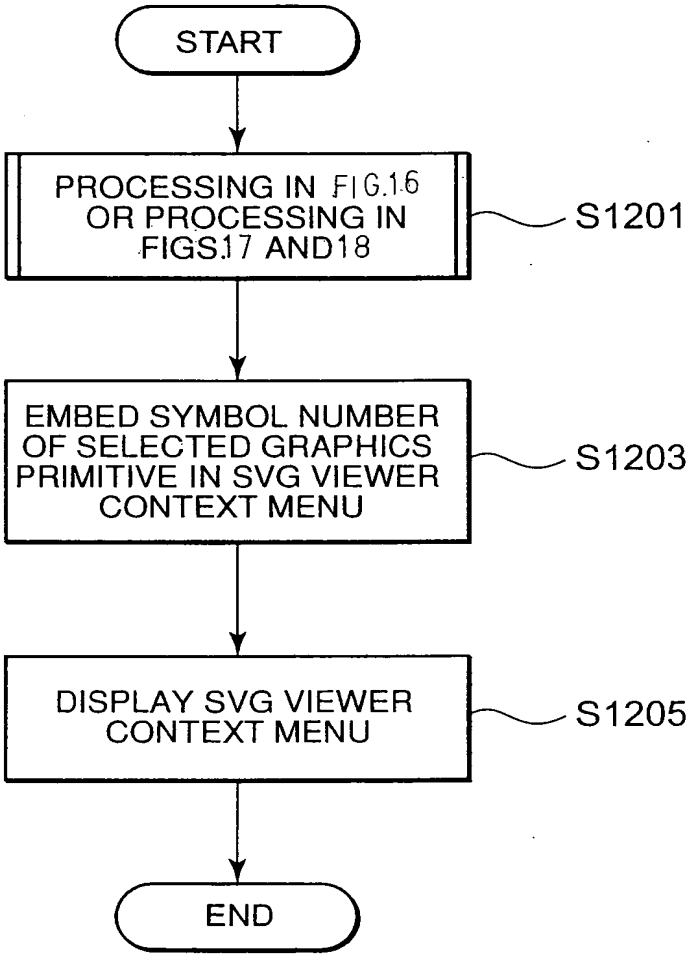

START
PROCESSING IN FIG.16 OR PROCESSING IN FIGS.17 AND18
S1201
EMBED SYMBOL NUMBER OF SELECTED GRAPHICS PRIMITIVE IN SVG VIEWER CONTEXT MENU
S1203
DISPLAY SVG VIEWER CONTEXT MENU
S1205
END

FIG. 32

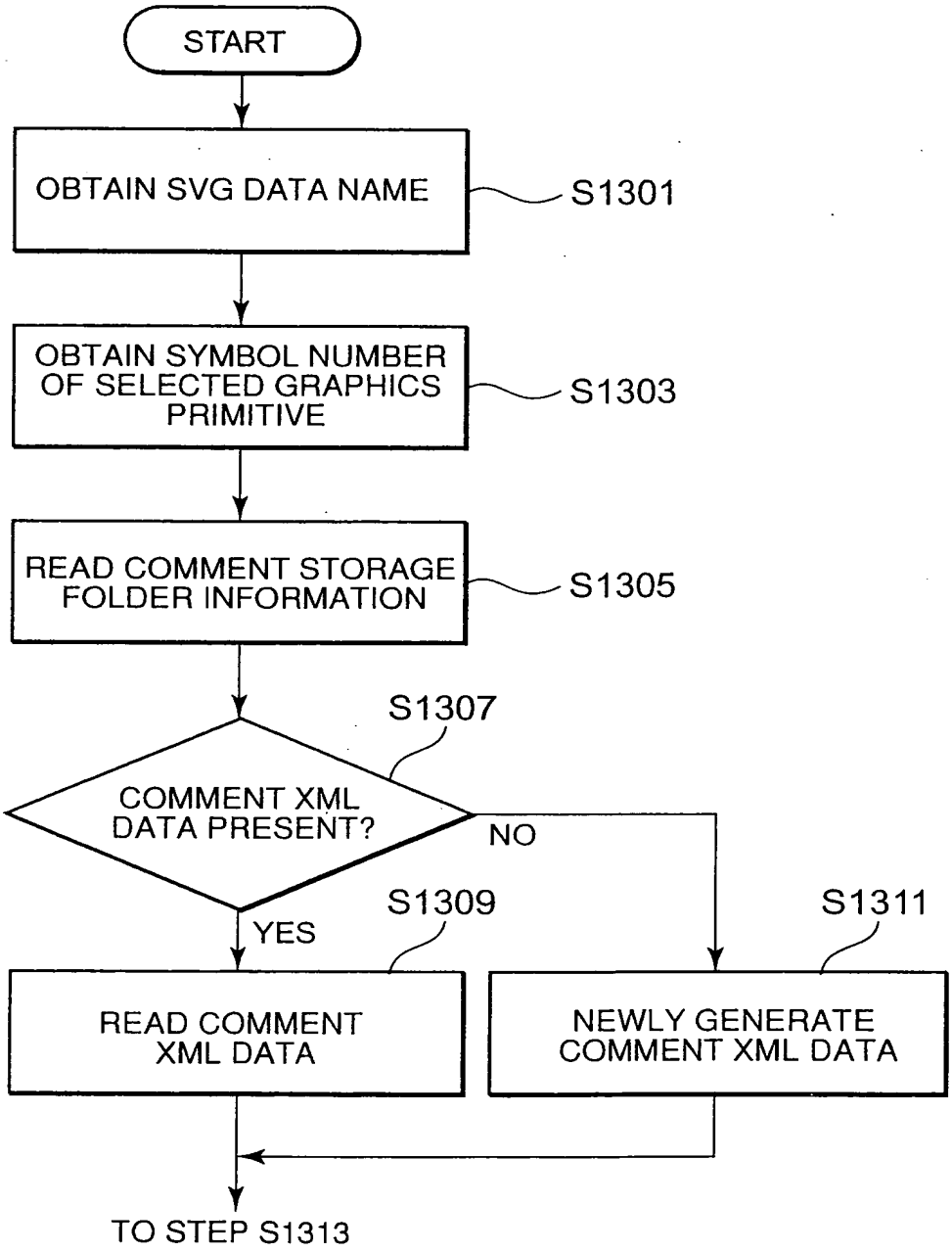

START
OBTAIN SVG DATA NAME
S1301
OBTAIN SYMBOL NUMBER OF SELECTED GRAPHICS PRIMITIVE
S1303
READ COMMENT STORAGE FOLDER INFORMATION
S1305
S1307
COMMENT XML DATA PRESENT?
NO
YES
S1309
S1311
READ COMMENT XML DATA
NEWLY GENERATE COMMENT XML DATA
TO STEP S1313

FIG. 33

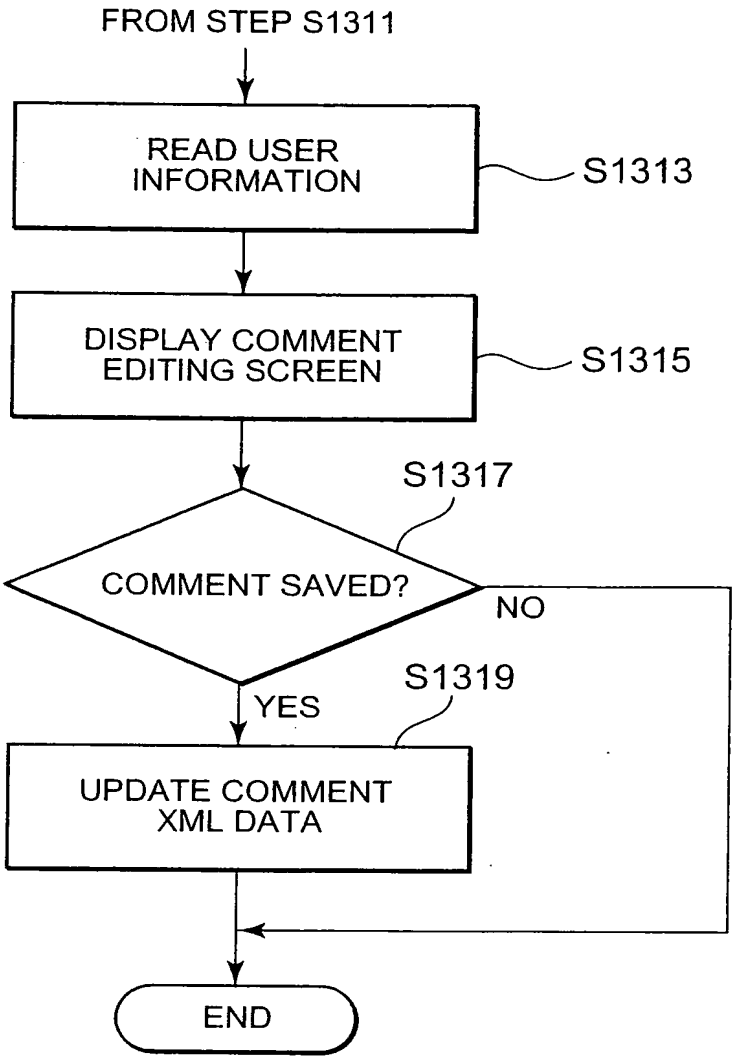

FROM STEP S1311
READ USER INFORMATION
S1313
DISPLAY COMMENT EDITING SCREEN
S1315
S1317
COMMENT SAVED?
NO
YES
S1319
UPDATE COMMENT XML DATA
END

FIG. 34

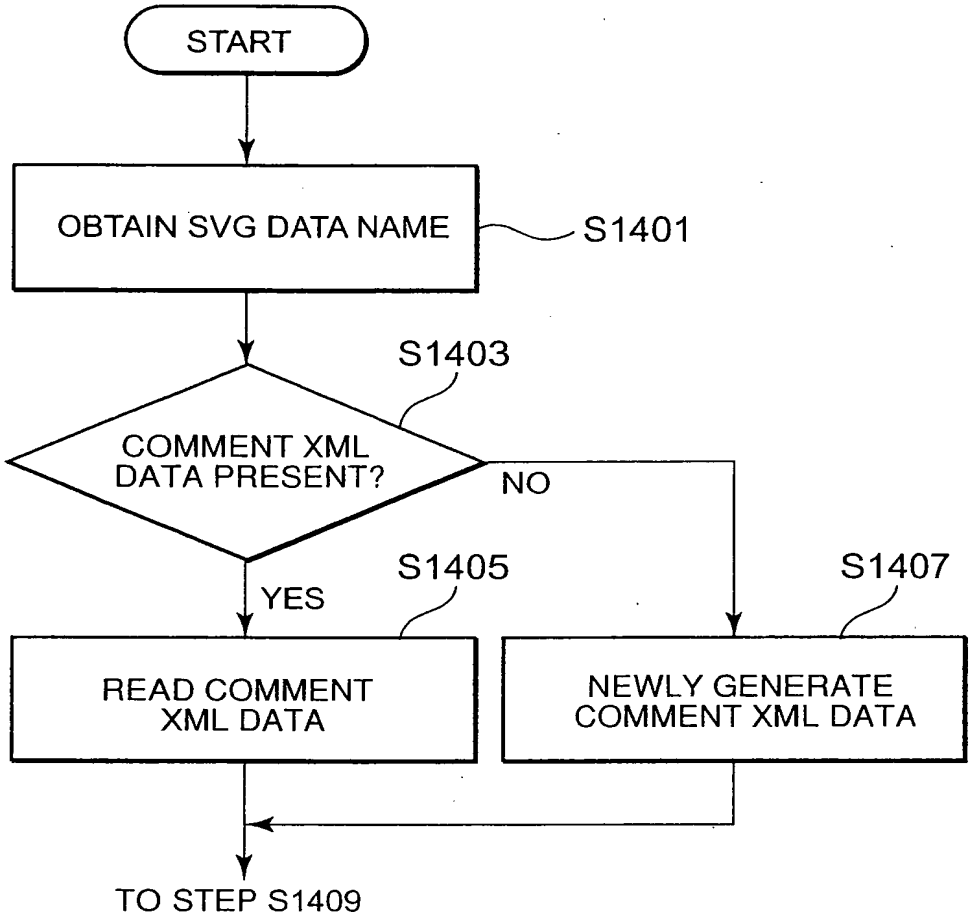

START
OBTAIN SVG DATA NAME
S1401
S1403
COMMENT XML DATA PRESENT?
NO
YES
S1405
S1407
READ COMMENT XML DATA
NEWLY GENERATE COMMENT XML DATA
TO STEP S1409

FIG. 35

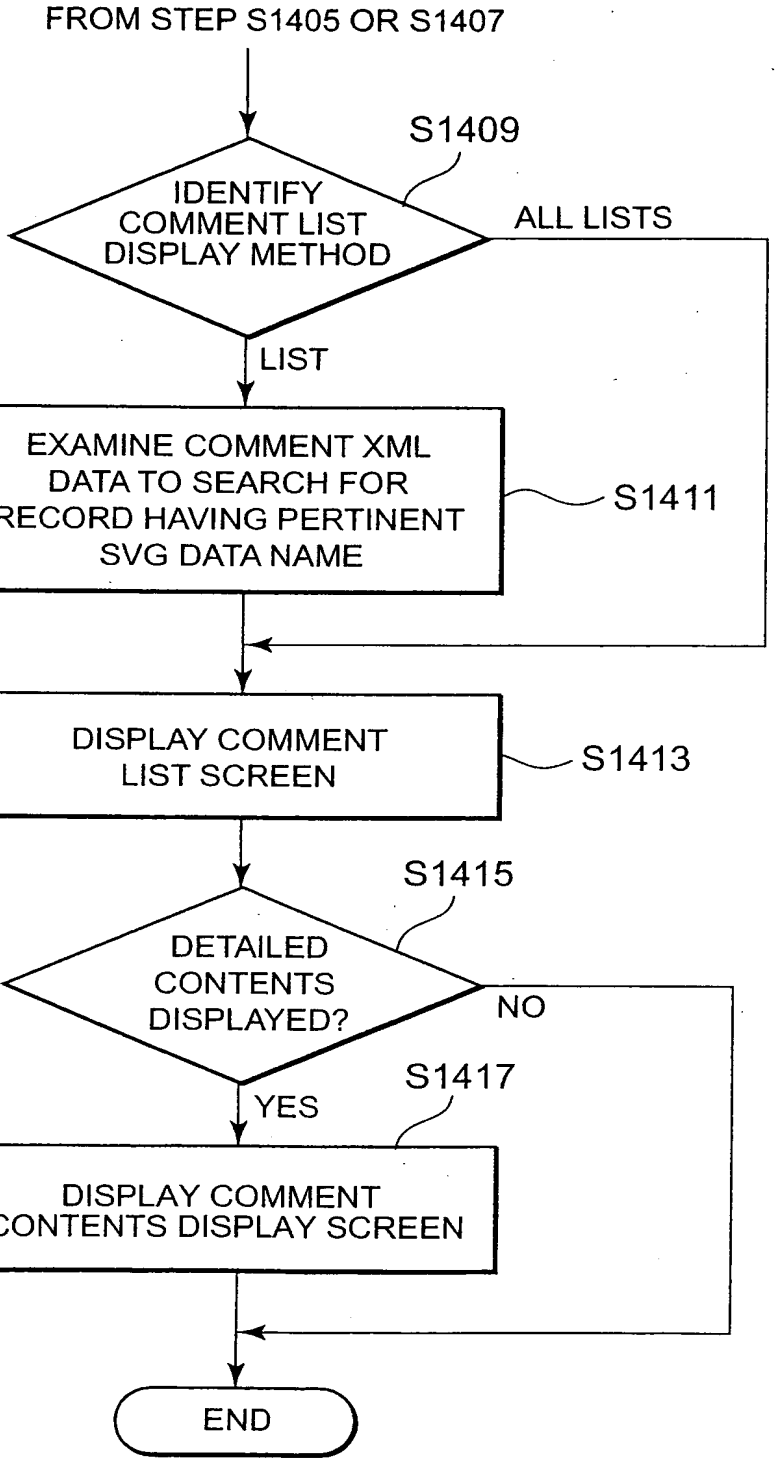

FROM STEP S1405 OR S1407
S1409
IDENTIFY COMMENT LIST DISPLAY METHOD
ALL LISTS
LIST
EXAMINE COMMENT XML DATA TO SEARCH FOR RECORD HAVING PERTINENT SVG DATA NAME
S1411
DISPLAY COMMENT LIST SCREEN
S1413
S1415
DETAILED CONTENTS DISPLAYED?
NO
YES
S1417
DISPLAY COMMENT CONTENTS DISPLAY SCREEN
END

FIG. 36

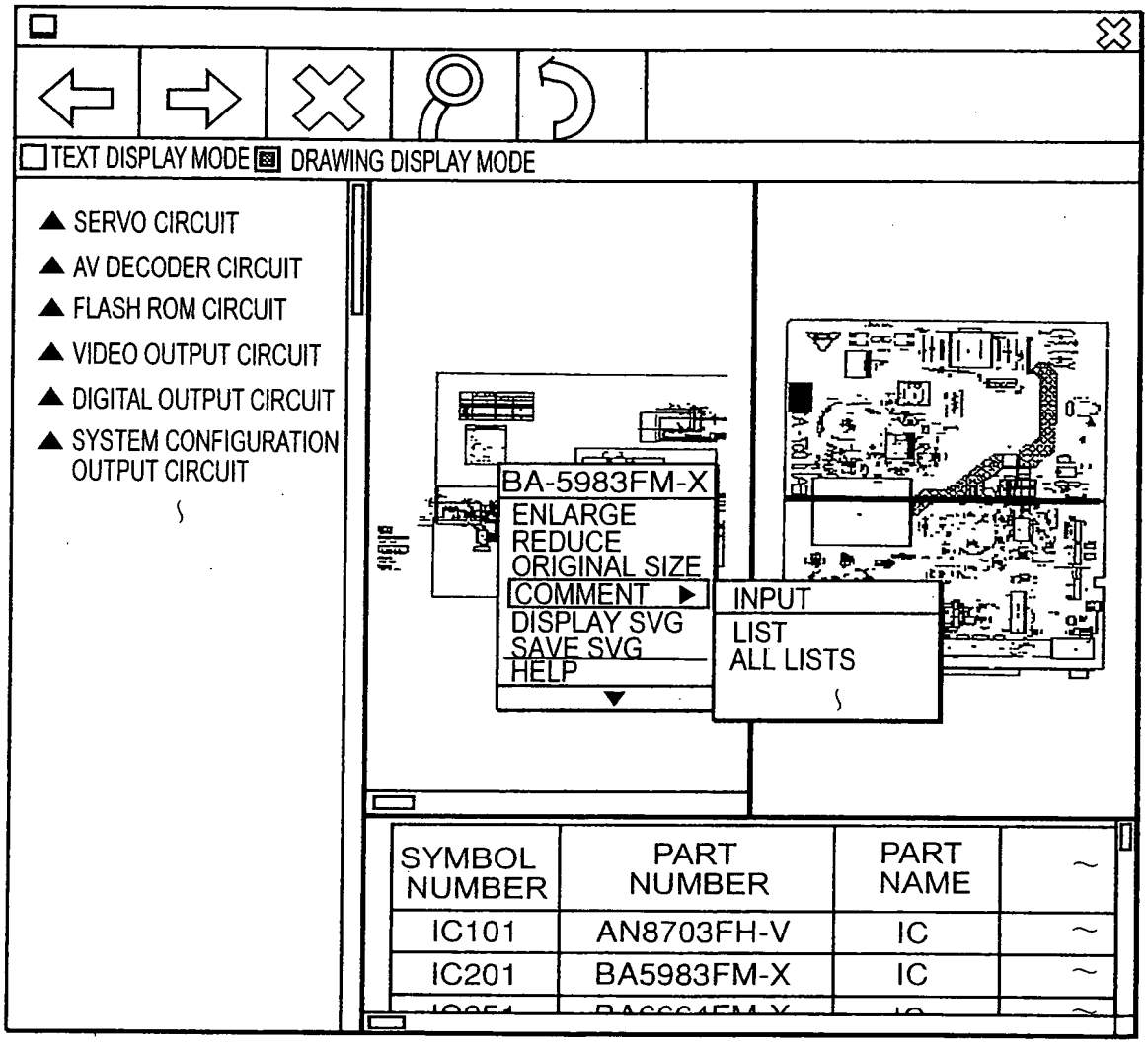
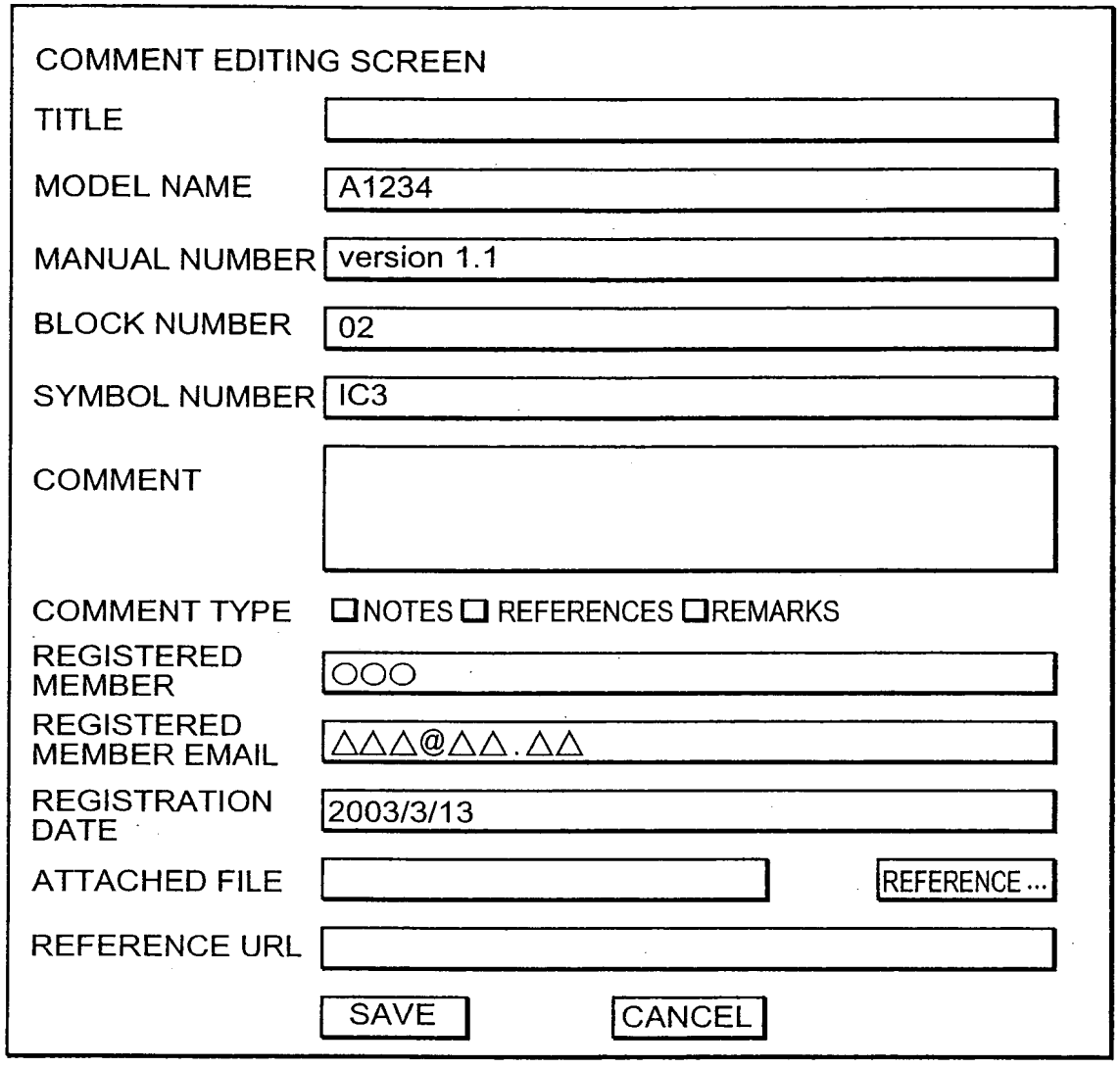

TEXT DISPLAY MODE
DRAWING DISPLAY MODE
SERVO CIRCUIT
AV DECODER CIRCUIT
FLASH ROM CIRCUIT
VIDEO OUTPUT CIRCUIT
DIGITAL OUTPUT CIRCUIT
SYSTEM CONFIGURATION OUTPUT CIRCUIT
BA-5983FM-X
ENLARGE
REDUCE
ORIGINAL SIZE
COMMENT
DISPLAY SVG
SAVE SVG
HELP
INPUT
LIST
ALL LISTS
SYMBOL NUMBER
PART NUMBER
PART NAME
IC101
AN8703FH-V
IC
IC201
BA5983FM-X
IC

FIG. 37

COMMENT XML DATA

SVG DATA NAME		
A12324_s010	TITLE	NO SIGNAL RECEIVED FROM REMOTE CONTROLLER
	MODEL NAME	A1234
	MANUAL NUMBER	version 1.1
	BLOCK NUMBER	02
	SYMBOL NUMBER	IC3
	COMMENT	SOLDERING FAILURE
	COMMENT TYPE	NOTES
	REGISTERED MEMBER	○○○
	REGISTERED MEMBER EMAIL	△△△@△△.△△
	REGISTRATION DATE	2003/3/13
	ATTACHED FILE	X X X .bmp
	REFERENCE URL	http://www.□□□□
A12324_m501	TITLE	GEARS EASILY DAMAGED
	MODEL NAME	A1234
	MANUAL NUMBER	version 1.1
	BLOCK NUMBER	12
	SYMBOL NUMBER	M3MM
	COMMENT	DESIGN CHANGE INFORMATION PRESENT
	COMMENT TYPE	REFERENCE
	REGISTERED MEMBER	○○○
	REGISTERED MEMBER EMAIL	△△△@△△.△△
	REGISTRATION DATE	2003/2/4
	ATTACHED FILE	X X X .pdf
	REFERENCE URL	http://www.□□□□
\	\	\

FIG. 38


COMMENT EDITING SCREEN
TITLE
MODEL NAME
A1234
MANUAL NUMBER
version 1.1
BLOCK NUMBER
02
SYMBOL NUMBER
IC3
COMMENT
COMMENT TYPE
NOTES
REFERENCES
REMARKS
REGISTERED MEMBER
○○○
REGISTERED MEMBER EMAIL
△△△@△△.△△
REGISTRATION DATE
2003/3/13
ATTACHED FILE
REFERENCE ...
REFERENCE URL
SAVE
CANCEL

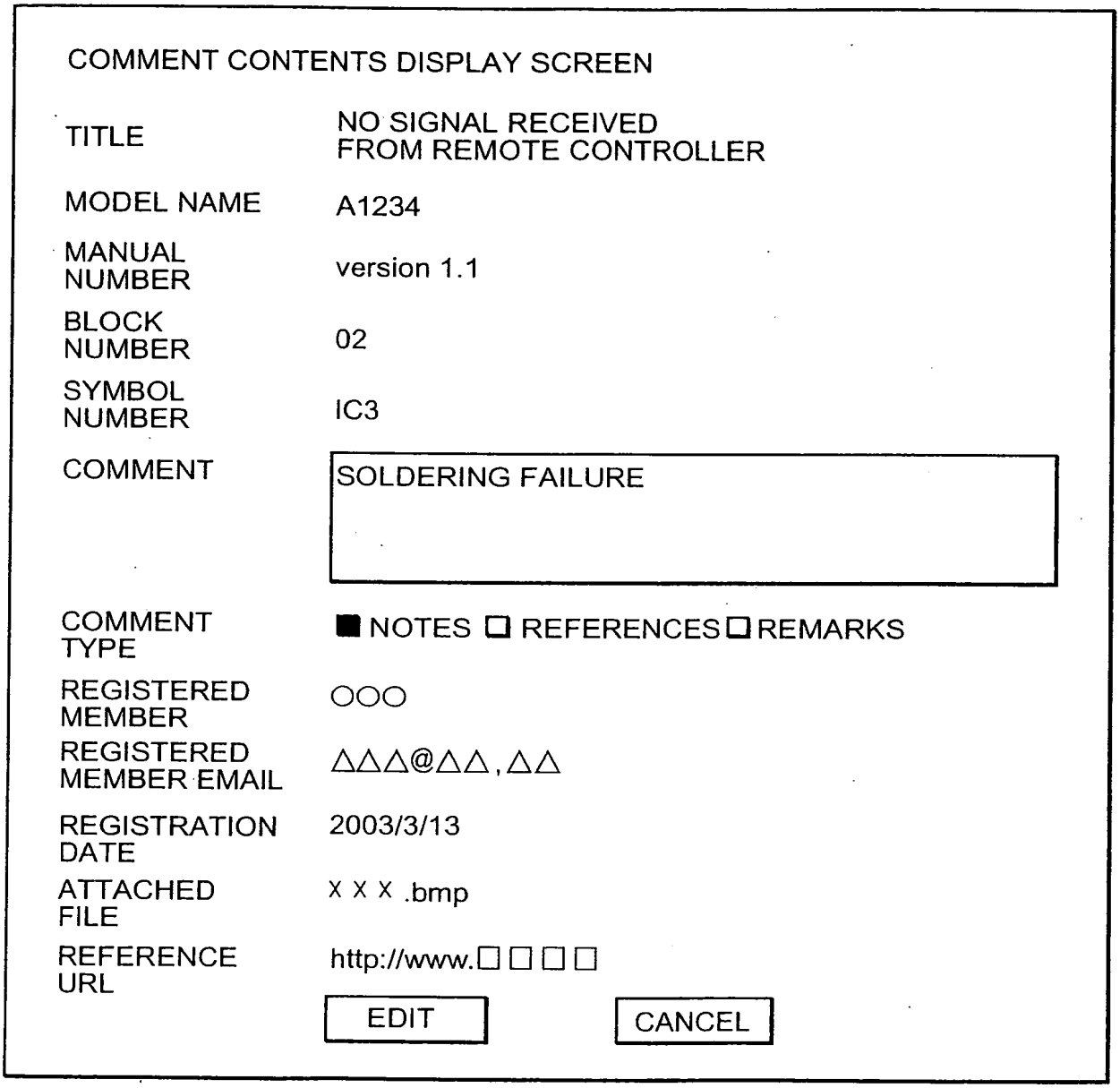
COMMENT LIST SCREEN

IMPORT EXPORT

No	BLOCK	SYMBOL NUMBER	TITLE	TYPE	REGISTRATION DATE	ATTACHMENT	LINK	
1	2	IC3	NO SIGNAL RECEIVED FROM REMOTE CONTROLLER	NOTES	2003/3/13	☑	☑	DELETE
2	12	M3MM	GEARS EASILY DAMAGED	REFERENCES	2003/2/4	☑	☑	DELETE
3	3		PRINTING ERRORS	REMARKS	2003/2/3	☐	☐	DELETE
4	4	IC12	EXCHANGE	NOTES	2003/2/3	☐	☑	DELETE
5	2	D6	LED FAILURE	NOTES	2003/2/1	☑	☐	DELETE
\	\	\	\	\	\	\	\	\

FIG. 39

FIG. 40


COMMENT CONTENTS DISPLAY SCREEN
TITLE
NO SIGNAL RECEIVED FROM REMOTE CONTROLLER
MODEL NAME
A1234
MANUAL NUMBER
version 1.1
BLOCK NUMBER
02
SYMBOL NUMBER
IC3
COMMENT
SOLDERING FAILURE
COMMENT TYPE
■ NOTES ☐ REFERENCES ☐ REMARKS
REGISTERED MEMBER
○○○
REGISTERED MEMBER EMAIL
△△△@△△.△△
REGISTRATION DATE
2003/3/13
ATTACHED FILE
x x x .bmp
REFERENCE URL
http://www.☐☐☐☐
EDIT
CANCEL

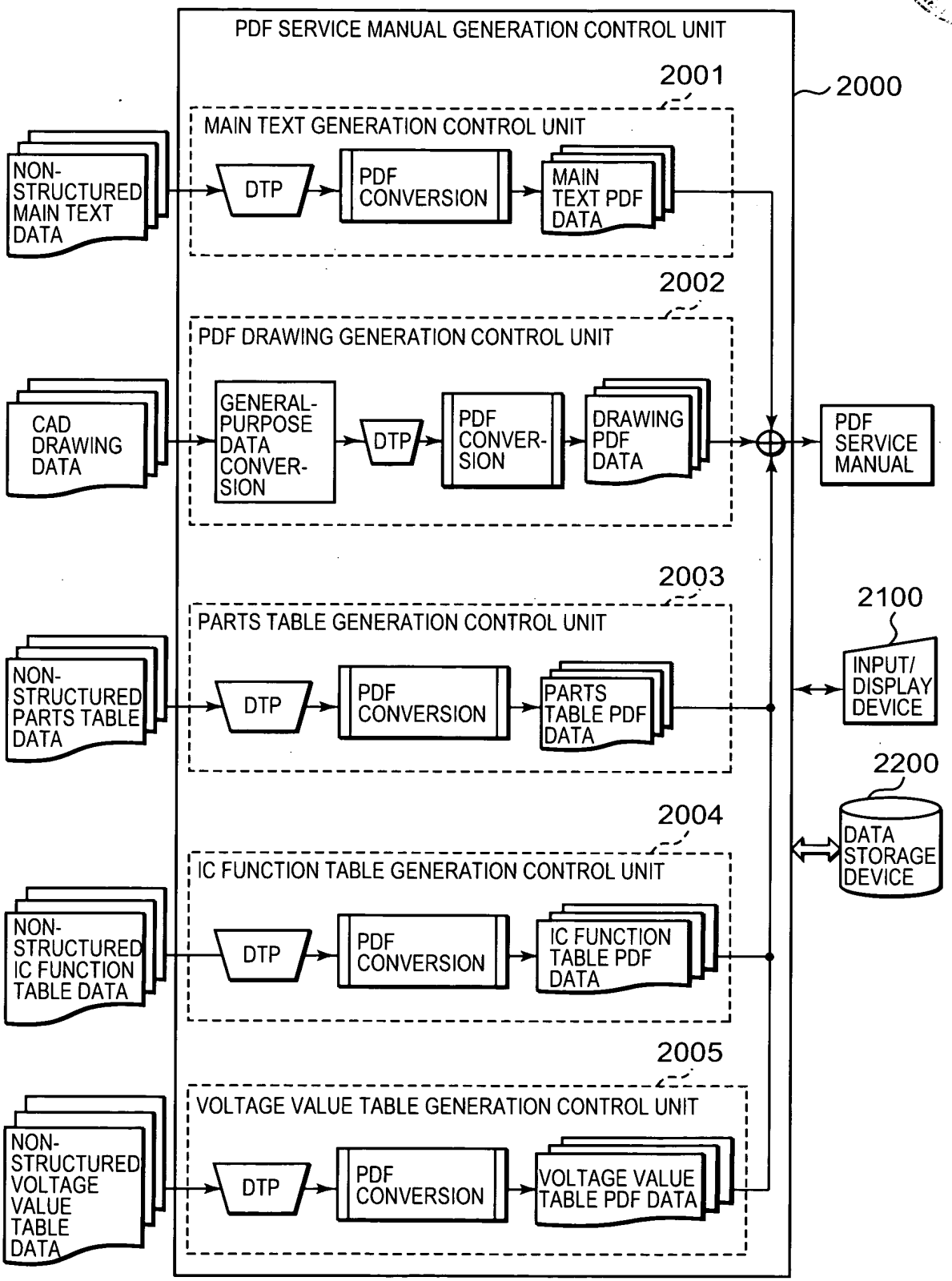



FIG. 41 PRIOR ART